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ABSTRACT

New recruits who need developmental work to be ready for college-level work often seem to fall into a gap in the military's structure for education. Contrary to what critics portray, research points to a variety of success-oriented developmental education programs. Factors that ensure program success include inclusion of problem solving and critical thinking, academic credit, incorporation as part of the academic affairs area of the institution, and the educators themselves. The Department of Defense (DOD) and the military services support educational opportunities for servicemembers. Although over 90 percent of servicemembers are high school graduates, many are at risk academically. Study findings illustrate a need for adult basic and developmental education, especially among minorities. Data suggest high percentages of those academically at risk will not draw available education benefits. Institutional efforts to support servicemembers through developmental education are in place at Tidewater Community College (Virginia), Central Texas College, and Fayetteville Technical College (North Carolina). Issues to be resolved are as follows: the need for developmental education to help academically at-risk minority servicemembers; whether DOD has a real social mission for helping develop youth; resources; role of leadership development; identification of prospective students; and student motivation. Appendixes include a description of Servicemembers Opportunity Colleges, and course descriptions from developmental programs. (Contains 66 references.) (YLB)

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Helping Servicemembers with Flawed High School Education

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Helping Servicemembers with Flawed High School Education

Clinton L. Anderson, Sara Victoria Harding, & Steve F. Kime
Servicemembers Opportunity Colleges

I. Introduction

Education in the U.S. military has a long and successful history of innovative programs focused on developing the human resources available within the Armed Forces. The military services encourage servicemembers to better themselves through voluntary education efforts. Where the need for remedial work is recognized, aggressive basic skills programs exist to teach basic academic skills. These programs are authorized for the purpose of maintaining effective operations through the military job performance of servicemembers who must be "technically and tactically proficient."

As the Armed Services approach the 21st Century, they are undergoing tremendous change. Based on the geopolitical and economic circumstances, the United States military must become smaller, higher technology-oriented, and more mobile, with greatly enhanced capabilities for being successfully inserted into complex and changing politico-military situations wherever the national interests dictate. Witness some recent examples within the last few years: Grenada, Panama, Southwest Asia, Los Angeles, and most recently, South Florida. No longer can the United States simply rely on the soldier, sailor, airman or marine who will do just the simple things he or she is "trained" to do. More and more, federal and state governments need the considered actions of educated people throughout the military ranks to accomplish missions thrust upon the Defense structure. The United States needs a total force that is both educated and trained. Critical thought *and* crisp, decisive military action must be present in various blends at each organizational level and at unpredictable times. This requires the availability of truly literate servicemembers as well as highly trained ones. There must be constant readiness to fight both smaller and smarter.

Military recruiting has not been ignorant of this changing world. After all it was changing well before the collapse of Communism and the changed situation we see today. High technology is not new. So the military services have been busy raising the sights of their recruiters. They have made remarkable progress. Today the military accepts few recruits without a high school diploma. Many have some college work, and more than ever before are college-capable. Some military personnel managers would say

that the days are gone when recruits cannot read and write. Servicemembers meet minimum literacy standards for understanding "user-friendly" manuals and for undergoing basic military training.

The trouble is that a high school diploma does not guarantee mastery of basic skills, certainly not the so-called higher order of basic skills (e.g., abilities to think and reason, problem solve, etc.). Some with diplomas still cannot read and write well enough to succeed in advanced training and specialty job performance in our modern military establishment. These unfortunates, like generations before them that joined the nation's Services to do something with their lives unattainable in the civilian world, still need basic skills! They may be fewer than in the past, but this need has not entirely disappeared and perhaps never will. But this lowest academic layer of the new recruit population is not what this paper is about.

There is a middle academic layer in the new recruit population that must be addressed. Many of the nation's high school graduates who elect to join the military are not ready for what is generally considered "college-level" work. They can read and manipulate whole numbers, and more than likely play computer games with great skill and agility. But their writing, mathematics, English, and computer skills need much work before they can develop into effective leaders and managers of sophisticated people and equipment. There is a large and growing need for developmental education to prepare these people for a career both within the military and in the civilian world.

Those needing developmental work often seem to fall into a gap in the military's structure for education. There are strong advocates for basic skills, vestigial remains of the era when high percentages of recruits needed that help. There are advocates of college programs ready to receive the servicemember-student as soon as she or he can do the work. While the growing need for developmental education is beginning to be recognized, there is not yet strong institutional advocacy for such programs and for the funding needed to make those programs readily available throughout the military organization. Who in the military, for example, will press for tuition assistance to help servicemembers take college courses that do not yield college credit?

Along with the practical problems of programs and funding, there are problems of perception. How do high school graduates come to understand that it is necessary for them to take "developmental" courses before going on with a college education? It was

always difficult to "sell" basic skills as an attractive option, and it may be just as difficult to promote developmental coursework. If it is true that the military of the future should consist of college-capable people, whether or not developmental courses should be required becomes a real issue. This in turn involves that fine line between education and training, and all the real and perceived difficulties that come with crossing that line. The requirements for developmental education must be identified, and the associated issues addressed at policy-making levels, so that we can get on with programs that will work.

II. Developmental Education in the United States

The continuum of educational development and learning beginning with elementary school and progressing steadily through middle school, high school and college does not exist for many people in the United States. In fact, according to John Brademas, President of New York University, every fifth person now hired by business and industry in the United States is "both functionally illiterate and innumerate." (Brademas, 1990, p.B1) But then he postulates that, in the future, nations will be judged increasingly on economic rather than military might. The American Society for Training and Development speculates that between now and the year 2000 three-quarters of all American workers will need retraining in order to have meaningful employment. Average adults must be prepared for five or six different career changes during their life span. (Brademas, 1990, p.B1) The National Education Goals Panel (1991), in *America 2000,* recognized this situation by establishing Goal Number 5:

> By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of Citizenship. (p.64)

This panel understood that the basic reason that adults enroll and participate in education courses is to upgrade job skills. It also noted, that among some year groups, two-thirds of all high school graduates had enrolled in a postsecondary institution but during 1990-91 about two-thirds of all adults surveyed believed that they had been prevented from taking adult education courses for a variety of reasons. (p.63) Therefore, it identified the following major objective in accomplishment of Goal Number 5:

> All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational-technical, work place, or other programs. (p.64)

During the decade of the nineties, the median years of education needed for employment is expected to rise from 12.8 years to 13.5 years. (Department of the Army, 1991). (See figure 1 for data display.) Thirty percent of all future jobs will require four-year college completion or graduate work.

Figure 1

Current Jobs	Education Needed	New Jobs
6%	8 years or less	4%
12%	1-3 years of high school	10%
40%	4 years of high school	35%
20%	1-3 years of college	22%
22%	4 years of college or more	30%
100%	Total	100%
12.8	Medium years of school	13.5

Source: Hudson Institute

The rising skills requirements, coupled with a so-called "skills gap" briefly alluded to above, is further complicated by a dwindling labor supply. It is anticipated that by the year 2000, the number of 25-to-34-year olds entering the labor force will drop by more than 12 percent. The number of 16-to-24-year olds entering the workforce will also decrease before bottoming out in 1996. (Bureau of Labor Statistics) Hence, business and industry must search for skilled workers while colleges and universities must view continuing education as a significant part of their mission.

The problem of students inadequately prepared for college work is not new. As early as 1852, the University of Michigan began addressing it. By 1862, Iowa State College had implemented a "remedial program for its students who had deficiencies in reading, writing, and mathematics." (Mickler & Chapel, 1989, p. 2.) Now most colleges and universities in the United States offer some type of development courses to help their students achieve success with college level courses. Lederman, Ribaudo, & Ryzezewic (1985) found over 60% of four-year and 80% of two-year colleges offer some form of remedial coursework. Research shows that approximately one-third of all entering freshmen at both two-year and four-year institutions require some remediation in reading, writing, and mathematics. (Plisko & Stern, 1985)

The presence of remedial college courses is not universally applauded by all leaders in higher education. Some contend that the underprepared student should simply not be

admitted. Others claim that tight higher education funding should be spent on "higher education" not for remedial courses. Opponents often cite marginal results achieved by deficient learners. On the other hand, proponents provide evidence based on exemplary programs that do, in fact, enable poorly prepared students to overcome their academic weaknesses. (Mickler & Chapel, 1989) Many can cite individual learners who have overcome tremendous educational difficulties and gained academic success that, in turn, brought about both personal and economic fulfillment.

Developmental education traces its theoretical foundations back to a variety of learning theories including behaviorist, humanist and developmental, drawing heavily on each. (Boylan, 1986) Poor academic self image seems to be a common student or would-be student trait causing failure in college or preventing potential students from ever entering college. (Keimig, 1983) Many practitioners in developmental education prefer cooperative and collaborative learning methodologies focused on helping the student overcome the "failure identity." Solving problems in the social context of small groups can form a basis for successful learning in both work and personal living. (Sandberg, 1988) Emotional and academic support of peers while learning seems to enhance self-esteem of the disadvantaged learner. Hunter Boylan (1983) offers the following specific advice to developmental educators on ways to overcome "failure identity" among their students:

- ensure assigned tasks are sufficiently manageable so the students have a reasonable probability of success;
- design tasks that are sufficiently challenging to provide a sense of accomplishment;
- provide positive, supportive, feedback;
- offer supportive guidance to help students adjust their behavior to focus on success;
- provide in the classroom social experiences that enable the student to interact in a meaningful fashion; and
- teach in ways that respect individual rates and styles of learning. (p.47)

Contrary to what critics would portray, research over the past twenty years points to a variety of success-oriented developmental education programs. (Platt, 1986; Morante, 1985; Roueche &Baker, 1986; Chad, 1985; Roueche, Baker, & Roueche, 1987; Mickler & Chapel, 1989; Chaffee, 1992) Remedial college programs can and often do improve student outcomes. Mickler and Chapel (1989) sum up these research findings this way : "Well-designed programs that are challenging and motivating but not

overwhelming produce positive results far beyond the expectations of the instructors." (p.3)

Researchers offer a number of characteristics observed in programs that they deem successful. These include:

a. An emphasis on academic skills development (e.g., basic reading, English, mathematics, science, study skills; test-taking skills, etc.) combined with personal counseling; (Donovan, 1975; Maxwell, 1979)

b. Clearly-prepared, well-articulated objectives which are made available to students; (Grant & Hoeber, 1978)

c. Appropriate faculty development in specific awareness, skills, and teaching-learning strategies; (Grant & Hoeber, 1978; Fantini & Weinstein, 1968; Christ & Coda-Messerle, 1981)

d. Continuous and systematic planning based on feedback and program monitoring and evaluation; (Grant & Hoeber, 1978)

e. Refinement and/or development of diagnostic instruments which accurately diagnose students' weaknesses and strengths not only in academic skills but also as learners; (Maxwell, 1979; Grant & Hoeber, 1978; Mickler & Chapel, 1989)

f. Availability of a wide variety of personal and academic development services to include tutorial services with the flexibility to meet a wide variety of student needs and to personalize the academic experience; (Boylan, 1983; Donovan, 1975; Maxwell, 1979; Keimig, 1982)

g. Employment of innovative instructional technologies; (Boylan, Bingham, & Cockman, 1988)

Understanding and use of computer technology have increasingly become integral basic skills taught in elementary, middle and high schools. Individuals who are not "computer literate" have difficulty competing in the workforce with those who are. Judith DeJoy (1991) contends that, by incorporating microcomputer technology into the teaching and learning process, "interactions between adult learners and computers will require new learning perspectives." (p.39) Some college preparatory programs have specific courses focused on computers and their use. The trend appears to be away from these dedicated courses towards incorporation of computers and their use as integral elements of traditiona! developmental education courses such as basic reading, English, mathematics, and science.

Some researchers specifically advocate inclusion of problem solving and critical thinking as integral to all developmental education programs. John Chaffee (1992) reviews developmental education at LaGuardia Community College, part of the City University of New York. He found that over 85 percent of all entering students needed remediation in basic language and mathematics. He countered a major misconception that learning to think critically should be reserved for academically advanced students who have mastered enough of the basics in order to do it. (p. 2) On the contrary, he found inclusion of critical thinking skills in developmental education enhanced and accelerated the development of students' reading, writing, and speaking skills. In addition, the critical thinking component developed and refined students' higher order thinking, reasoning, and problem-solving abilities. It encouraged students to explore basic attitudes towards their lives and larger social concerns, fostering such qualities as mature judgement and social responsibility. (p.3)

Other researchers found academic credit contributed to students' success in developmental education courses. However, Mickler and Chapel (1989) warned that "college credit for remedial work should not be allowed to dilute academic standards." They pointed out that "prerequisites should be established and enforced so instructors are not faced with the dilemma of lowering standards or failing students who have been inappropriately enrolled in courses beyond their current capabilities." (p. 4)

The way developmental education is incorporated into the college also contributes to its success. Most often developmental education programs are part of the academic affairs area of the institution. By being in this organizational structure, developmental programs can operate more effectively by having direct access to institutional decision makers. (Boylan, Bingham, & Cockman, 1988) Other organizational arrangements for developmental education do not have the same sense of institutional priority. Institutional marketing of developmental education makes a difference in program success or the lack thereof. In fact, a key question is: Does the institution have a marketing "frame of mind?" Does it seek ways to increase its market share of prospective applicants including those that may be underprepared for college? (Simmons & Laczniak, 1992) Boylan (1983) believes that participation in developmental education show the greatest gains when it was made "mandatory at the outset of their college careers for students considered to be 'high risk.'" (p.2) Keimig (1982) emphasized that developmental education should be integrated into the college's academic and social main-stream. It is important that the college avoid punitive, low-status overtones and the

"you-cure-them" mentality that can be accorded remedial education by hard-nosed academicians.

Perhaps the most important key to success is the developmental educators themselves. Gabriel (1987) offers a list of simple attributes found among successful instructors and other educators in this area: (a) they know the content; (b) they respect students; (c) they identify with student needs; (d) they are able to relate and explain; (e) they are capable of using a variety of technologies; and, (f) they use feedback.

Mickler (1988) summarizes the general conclusion about developmental education in the United States:

> The design of educational interventions for developmental students is a complex and often frustrating undertaking. ...(E)ducators must adopt a cautionary view of simplistic instructional systems that promise more than they can deliver. (p.5)

III. Current Situation in the Military Today

Composition of the Force

Planning for and the execution of a military build-down during the 1990's as a result of the end of the Cold War, and the establishment of a desired "peace-time" structure of military forces must reflect the national interests of the United States. During 1990 and 1991, Americans saw their military forces used rather extensively in Panama and in the Middle East. Numbers and projections are subject to rapid change as national strategic and budget issues for the 1990's are clarified. Keeping the rapidly changing events in mind, the statistics presented below can only provide general insight into the composition of the military.

When thinking broadly of Defense Department and the U.S. Coast Guard (a Department of Transportation component during peace time), over 5.3 million people compose the total mobilization force (see figure 2). Of that force, approximately two million personnel serve as the "active component" (see figure 3). This is in addition to the nearly 1.8 million reservists and members of the National Guard that comprise the reserve component forces. Also, there are over a million civilian employees of DoD, otherwise known as the civilian component.

The military has been particularly successful attracting high achieving minority youth. For example, the Army's enlisted force consists of 41.5 per cent minority personnel (32.0% Black; 4.5% Hispanic Americans, 4.9% Others). In all of Department of Defense, minorities comprise 32.7 of the total active-duty enlisted force (see figure 4).

Figure 2

Total Mobilization Personnel
(As of September 30, 1991)

Active Component	37.3%
Retired	29.1%
Ready Reserve	33.1%
Standby Reserve	.5%

100% = 5,317,398

Source: *Defense 92* p. 15

Figure 3

Active Duty Personnel
Officer/Enlisted
(As of December 31, 1991)

	Army	Navy	Marine Corps	Air Force	Total DoD	Coast Guard
Officer	101,771	70,091	19,368	95,309	286,539	7,128
Enlisted	585,078	483,417	173,710	402,268	1,644,473	32,172
Academy Cadets	4,291	4,273		4,361	12,925	675
Total	691,140	557,781	193,078	501,938	1,943,937	39,975

Source: *Defense 92*, p. 24

Figure 4

Minorities in Uniform
(As of December 1991)

	Army	Navy	Marine Corps	Air Force	Total DoD
Black Officers	11.2%	4.3%	5.1%	5.7%	7.3%
Black Enlisted	32.0%	17.7%	19.7%	17.2%	22.9%
Hispanic Officers	2.1%	2.5%	2.7%	2.0%	2.2%
Hispanic Enlisted	4.5%	6.5%	7.6%	3.8%	5.3%
Other Minority Officers	3.5%	3.1%	2.1%	3.1%	3.2%
Other Minority Enlisted	4.9%	5.7%	3.2%	3.3%	4.6%
Total Minority Officers	16.7%	9.9%	9.8%	10.8%	12.6%
Total Minority Enlisted	41.5%	29.9%	30.6%	24.3%	32.7%

Source: *Defense 92*, p.30

Education of the Force

During the past four years nearly all servicemembers brought onto active duty are high school diploma graduates (see figure 5). Ninety five percent of enlisted personnel on active duty possess a high school diploma or a GED or other alternative education certificate, but no bachelor's degrees. (See figure 6.) Five percent of the total officer strength on active duty has less than a bachelor's level of higher education. Over 36% of all officers have degrees beyond the bachelor's level.

Figure 5

High School Diploma Graduates
(Percent Total Active Duty Non-Prior-Service Accessions)

	FY89	FY90	FY91	FY92*
Army	90	95	98	100
Navy	90	92	96	98
Marines	95	95	98	99
Air Force	99	99	99	99
Total	92	95	97	99

*Through March 1992

Source: *Defense 92*, p.29

Figure 6

Education of the Active Force
(As of December 31,1991)

Officers

Below baccalaureate	15,507
Baccalaureate only degree	156,798
Advanced degree	105,762
Unknown	15,470
Total	293,537

Enlisted

No high school diploma or GED	24,133
High school graduate or GED	1,520,547
Alternative Education Credential	11,623
1-4 years of college (no bachelor's degree)	72,099
Baccalaureate degree	40,229
Advanced degree	3,326
Unknown	2,871
Total	1,674,828

Source: *Defense 92*, p.30

The enlisted force is clearly a target group for higher education, especially at the associate and bachelor's degree levels. Many among this group enlisted immediately after high school. Many were searching for training and education but chose the military instead of becoming a traditional college student. Many did not have the financial resources needed to go to college, while others merely wanted a break in their academic studies. Some came from family backgrounds that did not give postsecondary education a high priority. Considerable numbers of them were attracted to the military by the educational benefits promised by military recruiting efforts.

In its *Biennial Report to Congress on the Montgomery GI Bill Education Benefits (MGIB) Program*, Department of Defense (1992) found the MGIB program to be "extremely popular among young people enlisting in the Services." (p.3) This report continues:

> Since the MGIB began on July 1, 1985, almost 1.7 million recruits have entered military service for the programs. Over 1.2 million have enrolled, for an overall enrollment rate of 75.8 percent. (p.3)

Since its inception, generally higher proportions of minorities than whites have enrolled in MGIB by allowing the government to take $1,200 out of their pay during their first twelve months of service. Similarly, enrollment rates for females exceed those of males by between 2 and 3 percent. This trend is especially true in the Army and Navy. (Department of Defense, 1992, pp. A-1 & A-2)

The military training and experience of active duty enlisted personnel are generally technical, as shown in figure 7. In order to achieve their military occupational specialty, rate or rating, enlisted personnel must successfully complete the required military service school courses. Many of these technical courses have been deemed worthy of academic credit by the American Council on Education. Combat arms and combat support servicemembers at sergeant levels are heavily engaged in managerial responsibilities in personnel, logistics, financial, and supervisory areas. Consequently, all military occupational specialities lend themselves to some higher education that complements military jobs and supplements military training.

While in-service, many enlisted servicemembers engage in on-base education programs provided through local education centers and Navy Campus Afloat and Ashore Offices. Historically, the voluntary education programs of active duty

Figure 7

Active Duty Enlisted Personnel
Skills and Specialties
(As of December 1991)

Skill/Specialty	Number
Electrical/Mechanical Equipment Repair	330,957
Combat	284,316
Administration & Clerks	255,697
Electronic Equipment Repair	164,059
Communications & Intelligence	162,098
Supply & Service Handlers	143,547
Health Care Specialists	97,264
Craftsmen	67,259
Other Technical	38,389
Other	100,671
Total	1,644,257

Source: *Defense 92*, p. 24

servicemembers have been directed more toward self-development of the individual learner as a member of society than toward providing well-trained members of a military

machine. (Anderson & Kime, 1990) Postsecondary education has been aimed toward (1) the servicemember as a unique individual, (2) the service person as a member of a specific Armed Service and (3) the service person as a member of society at large (Berry, 1974, p. 27).

Department of Defense Directive 1322.8: *Voluntary Education Programs for Military Personnel* provides the official Defense policy (Department of Defense, 1987). This policy requires the military services to establish and maintain voluntary education programs that provide opportunities for servicemembers to achieve educational, vocational, and career goals. Access to these opportunities is to be as available to military personnel as to citizens in the civilian sector. These opportunities include not only secondary, postsecondary, and vocational programs and testing, but also in-service educational guidance and counseling by qualified personnel. The Departments are required to encourage the use of voluntary education programs to enhance the servicemember's "military effectiveness and prepare for positions of greater responsibility in the Military Services." (Department of Defense, 1987, p.2.) The Army, Navy, Air Force, and Marine Corps provide educational staff, finances, and other resources for the operations of these voluntary education opportunities to meet the needs of the military services. The military services also issue regulations that govern the conduct of their voluntary education programs. (See figure 8 for DoD Voluntary Education Program Individual Enrollment/ Degree Completions Data for FY 1991)

Figure 8

DoD Voluntary Education Program
Individual Enrollment/ Degree Completions
Fiscal Year 1991

	Army	Navy	Marine Corps	Air Force	Total DoD
Individual Enrollments					
Basic Skills	55,898	14,282	6,493	1,479	78,152
Postsecondary					
Undergraduate	241,770	125,120	29,180	185,695	581,765
Graduate	20,321	10,835	2,684	28,299	62,139
Degree Completions					
High School/GED	1,495	1,209	104	26	2,834
Associate Degrees	2,112	2,013	306	11,778	16,209
Baccalaureate Degrees	2,233	1,164	417	2,868	6,682
Graduate Degrees	1,052	497	252	2,347	4,148
Doctorate Degrees	0	0	5	53	58

Source: *DANTES Information Bulletin*, Apr.92, Suppl.3

In addition, DoD Directive 1322.8 spells out the function and responsibilities of the Defense Activity for Nontraditional Education Support (DANTES). The mission of this in-service Defense agency, administered by the Department of the Navy, is to support the voluntary education functions of the Office of the Secretary of Defense and the military services by "administering nontraditional education programs, managing specified contracts for education services, providing educational and informational materials, conducting special projects and developmental activities, and performing other management and education support tasks" (Department of Defense, 1987, p. 7-1).

DANTES replaced the United States Armed Forces Institute (USAFI) in 1974. It provides servicemembers in all the military services with a wide range of examination and certification programs. It operates an independent study support system and an examination score recording and reporting system. DANTES is the leading proponent agency as well as advocate for nontraditional education within Department of Defense and, perhaps, the whole United States. As the composition, structure and mission of the military services change— and severe budget constraints seem inevitable in the 1990's—

DANTES' job will become even more critical in helping servicemembers to fulfill their voluntary education needs and aspirations.

Since May 7, 1948, the principal vehicle for helping servicemembers afford the costs of participating in college programs and courses has been the Tuition Assistance Program. (Anderson, 1991) The significance of the Tuition Assistance Program is that servicemembers have the means to participate in college courses at minimum costs without depleting the Veterans Educational Assistance benefits that the servicemember may be entitled to receive. The level of support for Tuition Assistance is a clear barometer of a military service's attitude toward educational development: when Tuition Assistance is reduced, enrollments decline. When it ceases, most soldiers, sailors, airmen, or marines simply cannot afford to go to school.

After their first term of service, servicemembers eligible for the Montgomery GI [illegible]can begin using their GI Bill benefits while in the military. Often servicemembers resist this option and persist in reserving these educational benefits for use after they have actually separated from the military service. In fact, DoD reports that "members who use MGIB ben.efits while on active duty comprise less than 5 percent of total usage." (Department of Defense, 1992, p. A-4)

DoD statistics show that over 600,000 servicemembers enrolled in postsecondary education courses during FY 1991 alone. (See figure 8.) Therefore, it must be recognized that many colleges and universities have dedicated themselves to educating servicemembers. These institutions of higher education recognize the educational needs of the servicemember and seek to fulfill them. Over 1034 postsecondary institutions are members of the Servicemembers Opportunity Colleges (SOC), a consortium of 13 national education associations and institutional members pledged to ease the difficulties of servicemembers seeking higher education. All institutions and associations that are part of SOC subscribe to *SOC Principles and Criteria.* (See Appendix A for detailed information regarding SOC and its programs, services and capabilities.) Most institutions serving servicemembers on or near military bases have memoranda of understanding with military installations that set forth specific policy and procedures by which that institution will offer programs for personnel. Most of these institutions have a strong track record of blending traditional and nontraditional education into their degree programs, and have made a concerted effort to remove administrative hurdles that hinder servicemembers' participation in coursework.

In summary, DoD and the military services support educational opportunities for their people. General Colin Powell, currently the Chairman of the Joint Chiefs of Staff, told the Army's Forces Command Commanders in 1989:

> As commanders, we can all think of instances in which the value of continuing education has been demonstrated to us personally and professionally. We should reflect on that value as it pertains to our uniformed and civilian components. Continuing education strengthens the foundation for training and improved job performance; it causes the force to develop intellectually, enhances promotion potential, and allows individuals to work toward personal and professional goals (Powell, 1990, p.1).

Academically "At Risk" Servicemembers

As shown above, well over 90 percent of today's servicemembers are high school diploma graduates. Unfortunately, this does not translate into similar high percentages of servicemembers who have mastered basic educational skills and are academically "college-capable." On the contrary, the military services continues to bring onto active military service many servicemembers who are "at risk" academically as measured by Armed Forces Qualification Test (AFQT) categories . The servicemember's AFQT score is a composite result of scores on reading comprehension, word knowledge, numerical operations, and arithmetic reasoning subtests of the Armed Services Vocational Aptitude Battery (ASVAB).

Scores on the AFQT are grouped into five broad mental categories with Category III divided into two groups. Servicemembers with scores in Categories I and II tend to be "above average" in trainability and are considered college-capable; those in Category IIIA are "average," generally considered an acceptable risk; those in Category IIIB are "average," but may be considered "at risk" academically for college work and for jobs requiring college-capable personnel; those in Category IV are "below average," definitely "at risk" academically and for jobs requiring college-capable personnel; those in Category V are "markedly below average" and, under current military accessions policy, not eligible to enlist. Obviously the military services prefer enlistees in the higher AFQT mental categories because it takes less training time and expense to prepare them for duty and continue their career development. (Department of Defense, 1982, p. 6.)

AFQT mental category groupings have enormous impact on all aspects of military personnel management including recruiting, retention, promotion, and job training. The military needs college-capable men and women as the Armed Forces become

increasingly technical in nature. It is an organization requirement for its personnel to be technically and tactically proficient by being able to think, to communicate, to reason and to act based on available information. Yet, these standards and classifications have placed definite restrictions on the recruit applicant pool particularly regarding recruitment among minority populations. An Office of the Secretary of Defense (OSD) study, *Profile of American Youth* (Department of Defense, 1982), revealed that , in a 1980 United States youth population subgroup analysis, the median AFQT score for White youth was 59, considerably higher than that of either Hispanics (23) or Blacks (17). (AFQT Mental Categories I and II and IIIA include percentile scores of 50-99; IIIB include percentile scores of 31-49; and Category IV includes percentile scores of 10-30.)

The FY 1990 non-prior service accessions data for the active force show that among White recruits 24.70 percent were Mental Categories IIIB and IV; that among Black recruits 52.52 percent were Mental Categories IIIB and IV; and among other minority groups 39.84 were Mental Categories IIIB and IV. (See figure 9 for graphic representation of FY 1990 Enlisted Accessions by AFQT Category and Race as provided in DoD's *Population Representation in the Military Services: Fiscal Year 1990,* p. B8.)

The problem extends to the Reserve Component Forces. Fiscal Year 1991 Selected Reserve Non-Prior Service Accessions data point out that, even though the 81 percent of Army National Guard recruits were racially listed as "White," over half (51.6 percent) were in Mental Categories IIIB and IV or academically at-risk for college work. (Department of Defense, 1992a, pp.88 & 89.)

The study and data, cited above, illustrate the critical need for adult basic and developmental education for the educationally disadvantaged in the military services, especially among minorities, but also with whites. Its importance is further magnified when researchers review data regarding MGIB enrollment and usage. It is worthy to note that, although a high school diploma (or its equivalent) is required of a person who enrolled in the MGIB to begin using the benefits, 65 percent of the non-high school graduates (35,000 of the 54,000) entering military service enrolled by paying $1,200 each since the MGIB was first offered in 1985. (Department of Defense, 1992, p. A-3.)

Figure 9

DoD Accessions
by Mental Category
and Race
1990

Source: Department of Defense, 1991, p. B8.

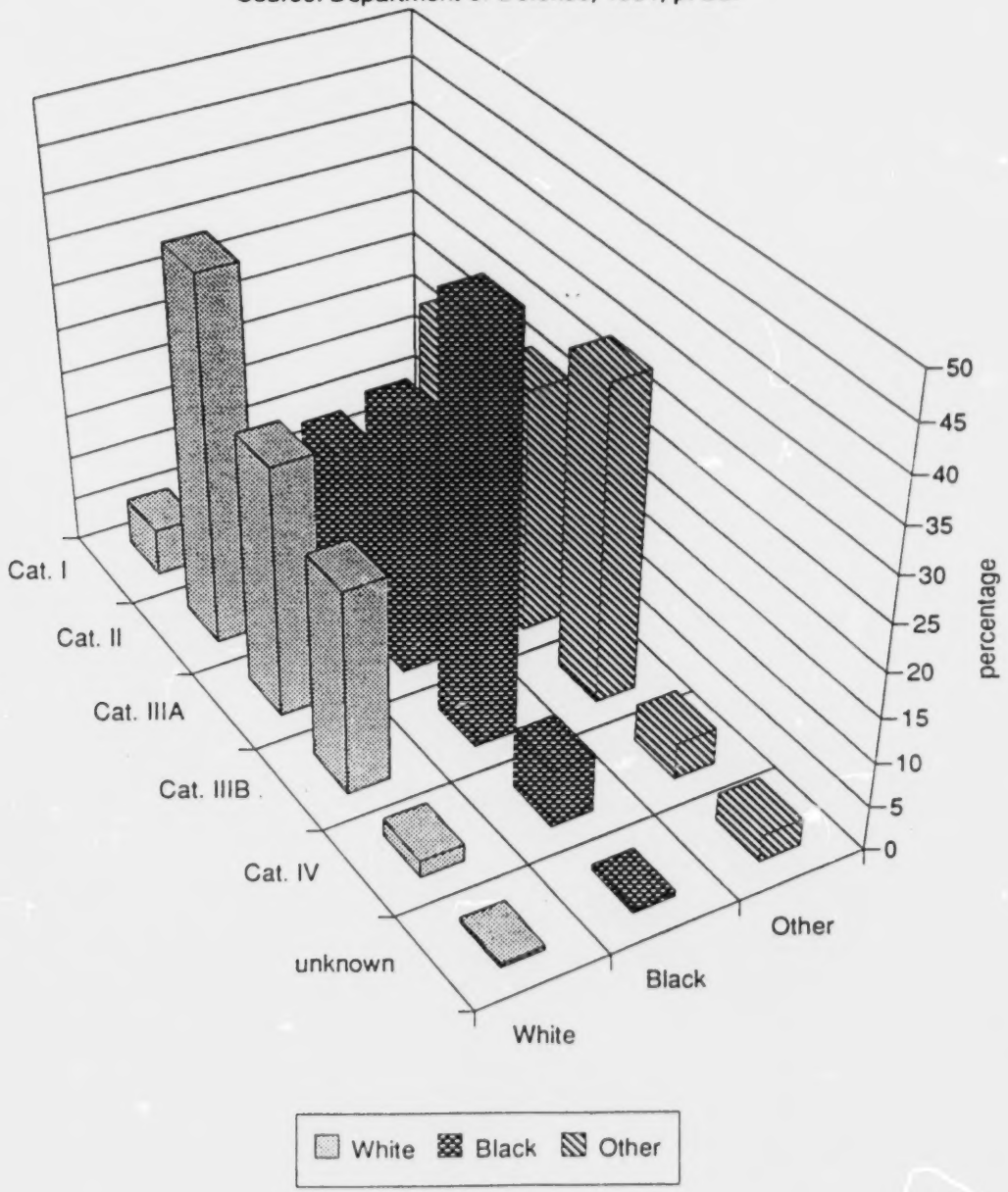


Figure 10 shows that roughly the same percentage of each mental category enroll in the MGIB program; that is, they pay $1,200 out of their pay to be eligible for GI Bill benefits. But review of usage data, those who actually take advantage of their GI Bill benefits, shows the usage rates of individuals in Mental Categories I and II greatly exceed the rate of those in the Mental Categories IIIB and IV. In simple terms, even though academically at-risk servicemembers enroll in MGIB and pay their $1,200, their probability of ever using the benefits is not good. (Reminder to readers: usage data is subject to change due to the fact that many eligible veterans still have time to go to college and use the benefits, but the likelihood of major changes in percentages is slight.)

Besides empirical test data that show need for developmental education in the military, perception surveys can indicate whether or not servicemembers believe they need this type of educational opportunity. The Navy Personnel Survey (NPS) is an annual comprehensive survey that address topical issues such as this one. The 1990 NPS included a question regarding enlisted personnel interest in "catch-up courses in mathematics, writing, and reading." The *NPS 1990: Analysis of Educational and Training Issues* (1992) shows that remarkably high percentages of respondents in each rank / grade category had interest in "catch-up" courses particularly in mathematics and writing. (See figures 11 and 12.)

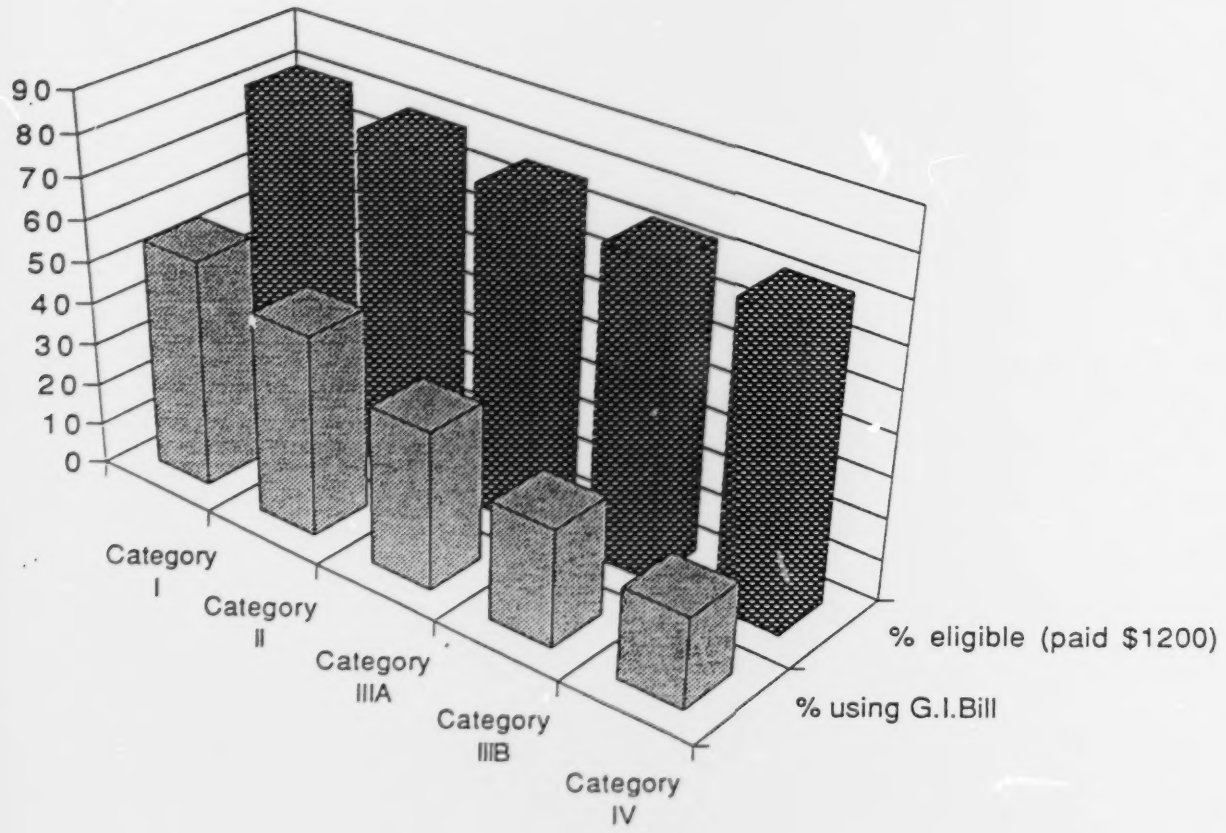
The Military Installation Voluntary Education Review (MIVER) Project which is tasked to assess educational programs at selected Army, Navy and Air Force installations has also documented the need for servicemembers to take prerequisite courses which often include developmental courses. In its Naples Report, a MIVER team recommended that "education counselors and college faculty take greater care in setting and enforcing course prerequisites and sequential course enrollment." (MIVER Naples Report, 1992, p.36) The MIVER team justified its recommendation as follows:

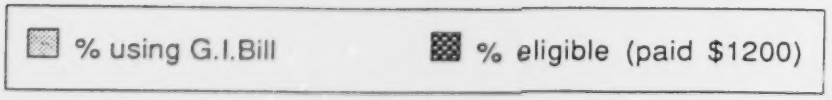
> The lack of enforcement of prerequisites and failure to take courses in appropriate sequences may lower the quality of the courses, major, and degree. Learning outcomes for the student in terms of knowledge, skill, and value levels may suffer, which learning outcomes would be otherwise achievable if the student were sequentially exposed to an expanding body of knowledge.

Figure 10

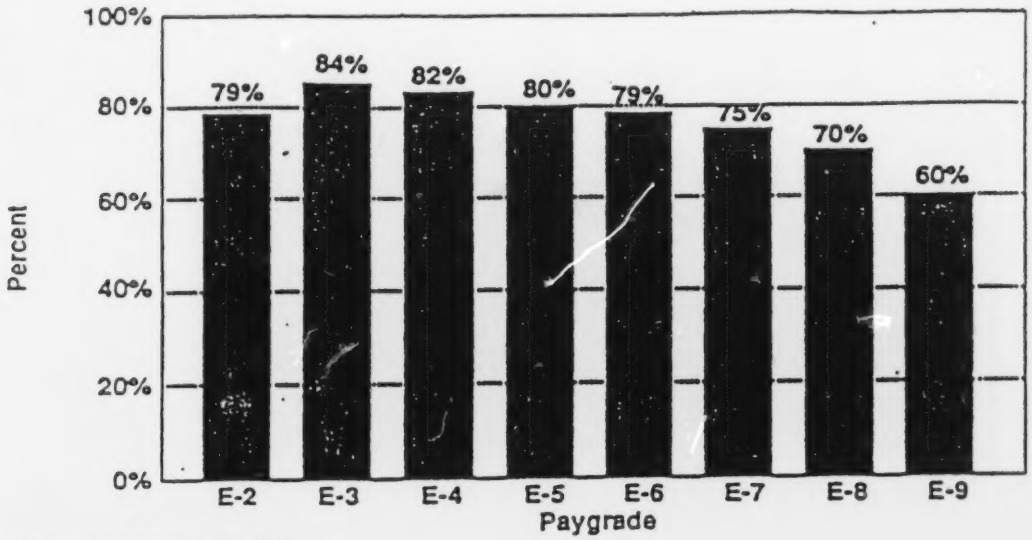
Eligibility for and usage of the Montgomery G.I. Bill by mental category

Source: Department of Defense 1992, p. A-3 and A-5





Sailor Interest in Catch-Up Courses

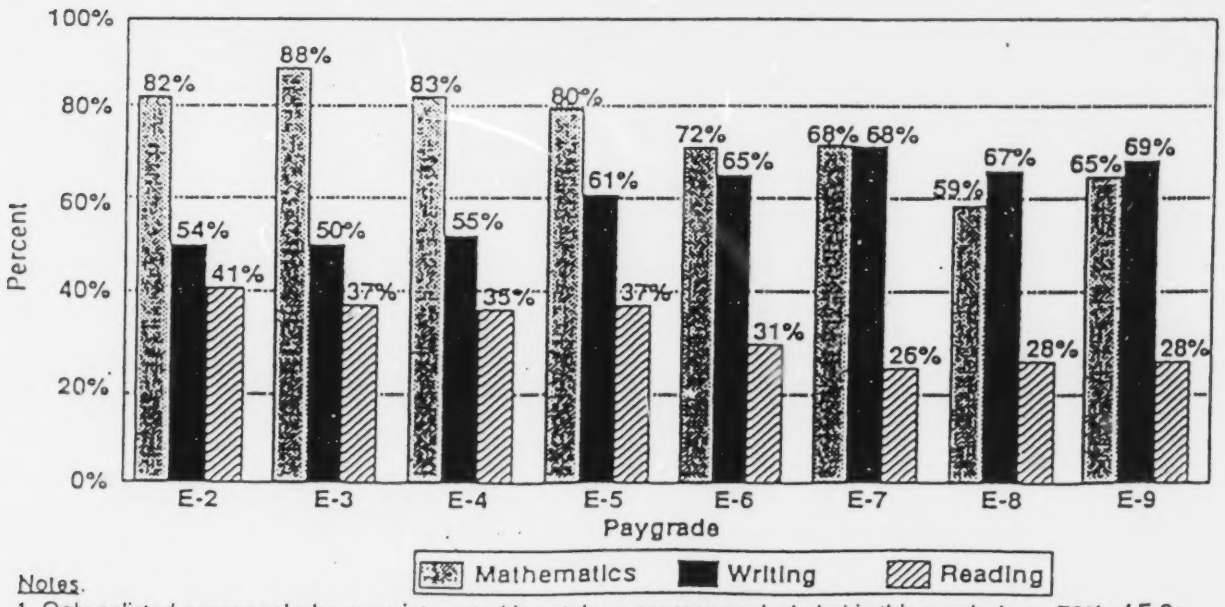


Note. Sample size: 6,887.

Source: Wilcove: NPS 1990, p. 6

Figure 12

Percentages of Enlisted Sailors Interested in Catch-Up Courses in Mathematics, Writing, and Reading



Notes.

1. Only enlisted personnel who were interested in catch-up courses are included in this graph. (e.g., 79% of E-2s were interested in catch-up courses [Figure 6]. Of those individuals, 82% were interest in mathematics [Figure 7]).
2. Individuals often selected more than one course. (e.g., 82% of E-2s were interested in a mathematics course; 54% in a writing course; and 41% in a reading course).

Source: Wilcove: NPS 1990, p. 6

> In courses with students of disparate preparations, the instructor often unwittingly tries to find the common base of knowledge among students and teaches to that level. In a typical eight-week term, the instructor may spend several weeks bringing members of the class up to the same level and then during the second half of the term fail to achieve all of the learning outcomes intended. Thus, it becomes critical to establish learning outcomes at the intended level and to teach to them. Students regularly complain about this problem in on-site interviews. (MIVER Naples Report, 1992, p.36)

In further discussions with MIVER team members and college representatives, the problem of prerequisites goes well beyond developmental education. But in three specific areas, it directly applies. First, in College Algebra, many, if not most, students definitely require a development course. High School Algebra taken five years or more in his or her past, perhaps even then with questionable learning outcomes, does not equip a servicemember to take and successfully complete College Algebra. Second, in writing across the college curriculum, MIVER team members comment that writing skills of many observed servicemember-students was "truly abominable." A developmental writing course would greatly assist many students. Third, many servicemember-students remain computer illiterate. At the very least, college instructors should expect term papers to be typed. Word processing skills are essential. Traditional libraries are being replaced by technology-oriented instructional resource acquisition centers. These are merely two examples of servicemember-student needs for computer training in order to access information and use it in their college coursework.

IV. Setting for Developmental Education within the Military Services

As already noted, DoD Directive 1322.8 authorizes educational programs for servicemembers. The current version does not address developmental or college preparatory education directly. It does provide a focus within "Voluntary Education Programs for Military Personnel" for "functional skills." It defines these as "academic competencies essential to learning and performing a military job (i.e., reading, writing, computation, and oral skills." (Department of Defense, 1987, p. 1) It provides authorization for noncredit programs as follows:

> The Military Services shall select functional skills and other noncredit programs based on the predetermined needs of the installation personnel and the ability of the provider to match the instructional level of the program to the learning level of the student population.
>
> The Military Services shall provide functional skills programs, ESL (English as a Second Language) training, and other noncredit programs

necessary or required for personnel to upgrade their skills to support their military occupations. (p.6-1)

The military services provide implementing instructions for DoD Directive 1322.8. For the Army, these instructions are incorporated into Army Regulation 621-5: *Army Continuing Education System* (Department of the Army, 1989). The current AR 621-5 does not directly address developmental or college preparatory education. It does, however, include in its October 15, 1981 edition an entire chapter on "College Preparatory Education" but this was deleted as more current versions were developed and published. The Army does include an array of basic skills education programs which include "ASEP" or the Advanced Skills Education Program to "enhance educational competencies of noncommissioned officers which support their career development and growth." (p.6) ASEP is limited to the following subject areas: Supervision (General, Personnel, Human Relations); Management (Basic, Personnel, Computer Literacy), Communications (Verbal, Effective Writing, Counseling); and Mathematics. (P.6) These areas are focused on military job performance but can also be construed as developmental education.

In 1991, the Army developed and sent to field commands for implementation the "Read-To-Lead Program." This program was created to assist noncommissioned officers in mastering materials relating to their military jobs and their professional development in the military environment. Program materials use selections directly from Army manuals and military forms. The program is focused on learning "strategic skills" needed for performance of military tasks and leadership development. For example, program booklets provide step-by-step instructions for: locating information quickly, using diagrams and charts, understanding technical terms, applying data to problem-solving situations, and drawing conclusions to make decisions. (*Read-To-Lead Soldier's Guide*, 1991, SG-1.) This effort appears to be Headquarters Department of the Army's latest thrust in helping soldiers with function skills.

OPNAV Instruction 1560.9: *Navy Voluntary Education Programs* (Department of the Navy, 1988) provides implementing instructions for the Navy. Again, developmental or college-preparatory education is not directly addressed. It does, however, provide for "Functional Skills" instruction and learning. They are defined as courses designed to improve competency in reading, mathematics, writing and computer literacy. (p.3 of

Enclosure 2). In addition, the Navy is sponsoring SOCNAVPREP, which will be discussed in detail later in this paper.

Air Force Regulation 213-1: *Educational Services Program: Operations and Administration of the Air Force Education Services Program.* as changed in 1984, 1987, 1988, and 1989 (Department of the Air Force, 1983) provides implementing instructions for the Air Force. This document authorizes a "Developmental IDEA Program, " to help "enlisted personnel who have been identified as needing developmental work in basic skills (reading, math)." (p. 5) However, in practice, this functional skills program ceased to exist as a Headquarters Air Force initiative during the mid-1980's. Since that time each Air Force installation has been left on its own to identify development or functional skills needs and meet those needs with locally available resources.

Colleges and universities that support servicemembers include developmental education courses in their catalogues. Sample course descriptions of developmental courses from a few selected institutions that support sailors are provided at Appendix B. These course descriptions give a general impression of what help may be available to servicemembers at installation level. This paper will examine three specific institutional efforts in some detail. But, before doing this, it is important to place functional or basic skills in a proper perspective in relation to developmental or college-preparatory education.

Basic Skills

The concept of literacy education in the military emerged during the earliest days of the American Army. (Anderson, 1992) In 1778 General George Washington recognized the need for providing basic academic instruction to illiterate, convalescent soldiers following the bitter winter at Valley Forge. (Wilds, 1938) The purpose of this instruction appeared to have nothing to do with requirements for any basic educational skills to perform military jobs. Instead, it was aimed at providing enlisted men with the ability to read and recite their *Bibles* in hopes of spiritual enrichment and a better life in the future. Consequently, it is not surprising that chaplains were formally charged with this education responsibility. (Duffy, 1985) The pedagogy of that day saw reading as the ability to decode familiar text. (Resnick and Resnick, 1977). Washington's initial efforts were later incorporated into an 1839 statute permitting "the administrative council at each post to hire a chaplain who also act as a schoolmaster." (White, 1968, p.479)

The subsequent history of literacy education in the military is long and complex. (Anderson, 1986; Anderson, 1992) It became a burning issue in the late 1970's and the first part of the 1980's when a large percentage of recruits were non-high school graduates and had below average scores on the AFQT. A description of the basic skills education programs available among the military services during 1980-1981 are provided in Appendix C. The vestiges of many of these efforts remain within the military services and targeted toward the academically at-risk servicemember. These programs continue locally to meet a variety of human and organizational needs. Visibility of program efforts tends to wax and wane with the interest of military leaders, their beliefs in education, and how education can be used to help servicemembers and the military. Continuity of basic or functional skills education rests primarily on the in-service directors of education, education services officers, specialists and counselors and their abilities to plan, develop, procure, and implement instructional programs that meet educational needs and then their ability to get servicemembers to participate successfully in those programs. (Anderson, 1992) These efforts must be linked to needs inherent in military job performance. The military leadership is proud of its recruitment achievements, particularly with regard to high school diploma graduates. The military leadership, therefore, appears somewhat hesitant to recognize that large groups of servicemembers *still need* academic help below the college-level. The linkage between basic or functional skills and developmental or college-preparatory education has traditionally never been strong and it is not strong today.

The American Preparatory Institute, co-located in Killeen , Texas, with Central Texas College and the University of Central Texas, appears to be one contractor serving the military that has the ability to meet a full range of secondary servicemember educational needs and can form some of the necessary linkages with college programs. This organization began as a result of a call for help from the Commander of Fort Hood, the largest single Army installation in the world. Today, its services extend throughout the world in many capacities. It advertises itself as "education for adults." (API brochure) The API instructional management system recognizes and appears to address real issues in secondary education opportunities for military personnel such as :

- Varying educational and functional levels,
- Diverse immediate and long-term educational goals,
- Limited time available for instruction,
- Frequently interrupted instruction,

- Transportability of the instructional program,
- Mobile student population, and
- Negative attitude toward traditional education.

API offers its programs in a variety of options. Its programs, contracts, services, and materials are described in Appendix D.

SOCNAVPREP/ Tidewater Community College

Servicemembers Opportunity Colleges provides the linkage between the military services and civilian higher education. Until 1992, SOC had not focused any of its efforts on developmental education. Instead, it has emphasized associate, bachelor's and certificate programs. At the request of the Navy's Education Service Chief in the Office of the Chief of Naval Operations, SOC began a pilot effort for sailors called SOCNAVPREP. During the first two quarters of FY 92, SOC held lengthy discussions with Tidewater Community College in eastern Virginia and Navy Campus. The purpose of SOCNAVPREP is to provide Navy enlisted personnel with the opportunities to enroll in a series of developmental education courses that will both improve their academic skills and upgrade their educational and professional competencies. SOCNAVPREP uses existing models of SOCNAV-2 and SOCNAV-4 as a guide. (See Appendix A for a detailed discussion of SOC network systems.) The areas of study include "Reading Improvement and Study Skills," "Writing Development," and "Mathematics." "Introduction to Computer Information and Applications" was also initially included as part of SOCNAVPREP even though it carries college credit.

SOCNAVPREP is designed for the sailor who, although a high school graduate, is not quite ready for college. Some sailors already take developmental courses at local community colleges to bridge the gap into college level courses. Many have not. Sailors seem to view existing programs as remedial rather than developmental. Many sailors are not even aware that such developmental courses exist. The challenge for SOCNAVPREP is two-fold. It must first identify and target sailors who, on their own, would not be knocking on Navy Campus or College doors. Secondly, it must motivate and encourage these sailors to take advantage of the program opportunities.

SOCNAVPREP is an attempt to "package" developmental courses into a more positive context that focuses on preparation for college rather than on remediation of basic skills. The program leads to a college preparatory certificate signed by the College and the sailor's Commanding Officer. This positive focus and recognition of achievement should encourage more sailors to take that first step toward a college degree.

Much of the effort to identify and motivate the sailor who is academically at- risk rests with the local command to which the sailor is assigned or attached. SOC is making commanding officers, command career counselors and local education services officers aware of this college preparatory program in order that they, in turn, help the sailor understand that education benefits him or her both in terms of self development and career enhancement. With this in mind, much of SOC's focus has been directed toward the local Navy commands in the Norfolk area.

SOC designed a marketing pamphlet with input from Navy Campus and TCC and delivered it in bulk to both Navy Campus and TCC. (See Appendix E.) The Navy Campus in the Norfolk area is distributing information regarding SOCNAVPREP as part of its on-going education briefing program during In-Processing Training for newly arriving Navy personnel in Norfolk .

The pilot program in the Tidewater area has given SOC some lessons learned. For example, as a result of feedback from sailors enrolled in Tidewater Community College, SOC learned that SOCNAVPREP works better if it focuses strictly on developmental language and math skills and does not mandate inclusion of a computer course. The Tidewater Community College computer course initially included in SOCNAVPREP is not a degree requirement for the College and, indeed, did not fit into many of the College's degree programs . Consequently, the course is being viewed as an additional requirement that deters sailors from enrolling SOCNAVPREP.

In order to move SOCNAVPREP out of the pilot stage, SOC plans to invite all SOCNAV-2 colleges to participate in SOCNAVPREP, as a "new" non-degree network within SOCNAV-2 composed of Reading, Writing and Mathematics.

Central Texas College

Central Texas College, located in Killeen, Texas, is the single largest provider of associate degree programs for servicemembers today. Over the past several years it has developed a Department of Developmental Studies. Courses in reading, writing, mathematics, and study skills form the basis of the CTC Developmental Studies Program. A listing of CTC Developmental Studies Course Descriptions are included as Appendix F. The study skills course is an especially important program element. It concentrates on such learning as note-taking, organization, discipline, time management, and stress management --all essential ingredients of a successful college student. (Moffitt, 1992)

In order for CTC to meet the needs of its various groups of students, it split many of its developmental courses into sub-courses to adapt to different schedules and different surroundings. CTC also uses a variety of methods of instruction such as self-pacing with mixed results. It is the experience of the Chair of the Department that students with real difficulties in reading, writing, or mathematics normally do not have the discipline or abilities to function successfully in a self-paced program. In his opinion, self-pacing should be reserved for refresher courses with students who do have the discipline and abilities to benefit from it. (Moffitt, 1992)

CTC places students in the appropriate courses by the use of a locally-developed placement examination. If questions arise as to the validity of score, CTC may administer an additional examination if one seems warranted.

CTC has found the instructor-based format with the use of computer-assisted courseware for reinforcement and enrichment to be the most effective in students achieving the desired learning outcomes. These courses provide structure to the learning experiences of the students by the instructor giving encouragement, guidance, and additional help as needed by the individual student. Although credit is listed with the Developmental Studies course descriptions, CTC does not count this credit toward a degree. As with many other states, Texas colleges and universities can not accept courses in development studies for degree credit.

In addition to the course materials, critical thinking skills and learning strategies are woven throughout the curriculum. These skills are deemed as important as other

course content. John Moffitt, CTC Developmental Studies Department Chair, summarizes his thoughts on developmental education this way:

> There is no quick, inexpensive, miraculous way of teaching a person skills that went unlearned through twelve years of public schools. Confidence and abilities must be developed as material is addressed and mastered. This often takes more time than one course designed to "cure all ills." (p.1)

Fort Bragg/Fayetteville Technical Community College

Fort Bragg, North Carolina, is a Corps-size Army installation with approximately 50,000 active duty servicemembers. It has four traditional delivery academic institutions (three four-year and one two-year) that provide undergraduate degree programs on or near the base. A brief review of developmental educational opportunities for their servicemember-students revealed that, to some degree, each of the four-year institutions have some type of help for entering soldiers in order to succeed academically with their degree programs. One of them, however, recently raised its admissions standards and no longer offers formal developmental courses. Instead, that University now refers potential students who need developmental education to Fayetteville Technical Community College (FTCC). There appears to be a good relationship among all four institutions with the other two four-year colleges offering some developmental courses but really not in competition with Fayetteville Technical Community College, the recognized leader in this effort.

The need for developmental education at Fort Bragg appears to be primarily with soldiers who have been out of high school for several years Most of these individuals were not scholars even during their high schools years. Now, they see a need for college, whether to compete for promotion, to qualify for service retention or to prepare themselves for life after the military. Program managers at Fort Bragg understand the obvious need. Even though FTCC provides a large, aggressive Basic Skills Education Program for Fort Bragg soldiers, BSEP is not sufficient. For the serious academically at-risk soldier interested in college, developmental courses are key to success.

For student placement, FTCC uses ASSET, "an educational advising, course placement, and retention planning" program developed by American College Testing (ACT) specifically to serve students entering two-year colleges. (ACT, 1990, p. 1) The curriculum is offered in two-levels with three academic quarters at each level. (See

FTCC Developmental Studies Curriculum at Appendix G.) The *FTCC Catalog 1990-1992* provides the following information regarding that institution's Developmental Studies:

> Developmental Studies at FTCC is more than "prep" or "make-up" courses; this program also cares for the student as a person. Opportunities for personal growth and development are offered in classroom courses and in the support services available to the Developmental Studies student. Career/life planning, personal guidance and counseling, health services, and many other "extras" help the student to succeed in the classroom. Developmental Studies at FTCC cares for the <u>whole</u> person.

This program is aimed at students entering postsecondary vocational-technical education. During the review of FTCC Developmental Studies, no special instructor training for developmental studies was noted. However, the Developmental Teacher Association did render some support. The BSEP faculty felt that they were not fully integrated with the rest of the college or with the Developmental Studies Program. Furthermore, they believed that they were receiving only a small percentage of those eligible to attend. Great significance was given to support by military commanders at Fort Bragg. When commanders provide support, the program works; when commanders do <u>not</u> provide support or do not understand their soldiers' need for the program, nothing happens with BSEP or with the Developmental Studies. The Developmental Studies faculty saw little, if any, linkage with the installation basic skills program, meanwhile the BSEP faculty expressed a concern that they were left out of the college loop altogether.

In summary, the FTCC Developmental Studies effort appears in the main stream of developmental education in the United States and a valuable opportunity for academically at-risk servicemembers stationed at Fort Bragg.

Service Academy Preparatory Schools

Perhaps the best examples of college preparatory education within Department of Defense rests with the three military service academy preparatory schools. These schools are the United States Military Academy Preparatory School at Fort Monmouth, New Jersey; the United States Naval Academy Preparatory School at Newport, Rhode Island, and the United States Air Force Academy Preparatory School on the base of the Air Force Academy near Colorado Springs, Colorado. These formal military schools are operated under a different branch of the Office of the Secretary of Defense than the DoD Voluntary Education Program. Each school operates, in concert, with its parent service

academy by taking selected potential service academy cadets who are academically at-risk and providing them a full program of academic study and and other development for an academic year. The academic program varies among the three schools. (The US Air Force Academy Preparatory School Course Descriptions at Appendix H serve as a sample for this paper.)

Besides the academic program, other training and development play important roles in developing a potential service academy cadet. These include professional military training, physical education and athletics. In addition, ethical development to include respect for an honor code is interwoven into the overall program.

These schools exist to prepare enlisted personnel, minorities, and women for entrance into the parent service academies. However, the General Accounting Office found "variations and lack of clarity in the missions, weak student qualifications, the absence of accreditation, uneven faculty credentials, and no established criteria for the mix of students or the assessment of programs." (GAO, 1991) Even among the military leadership, questions exist regarding the cost effectiveness of these schools. In 1992, OASD contracted the American Council of Education to conduct an independent analysis of the academic and general quality of academy preparatory school programs.

V. Issues in Developmental Education in the Military

Many issues emerge from the text of this paper. Only a few will be explored. Perhaps no issue is so glaring as the need for developmental education to help large percentages of minority servicemembers who are academically at-risk. The empirical data presented dealing with minority AFQT scores is disconcerting at best. Speculation is that "DoD will not let the services quench their thirst for quality." Instead DoD may impose "quotas" on the proportion of lower scoring recruits so that the military services must enlist at least a certain percentage of Mental Category IIIB and IVs. (Laurence, 1992, p.33.) General Colin Powell, Chairman of the Joint Chiefs of Staff, is quoted: "I would be willing to bet you that you won't see any significant change in the racial-ethnic make-up within the armed services." (Laurence, 1992, p.33.)

Given the trust that minorities obviously have in military service as a way for upward mobility, it is vital to address this issue. Data clearly show that minorities enroll in MGIB in greater percentages than whites but they reap the benefits at a much lower

rate than whites. Often they have the least ability to pay the $1200 during their first 12 months of service. They could well use this money for family obligations and other financial responsibilities. Instead, they buy the prospects for college benefits. They want to share in the American dream through postsecondary education. They believe that college would open doors for them economically. They want success for themselves and their families in American society. Unless some significant intervention occurs, thousands of the academically at-risk servicemembers will pay their money for naught. Implementation of a well-designed, student-oriented developmental education initiative could be the best affirmative action possible for academically at risk servicemembers.

A second and related issue is whether DoD has a real social mission for helping develop American youth. David Boesel, a senior education research analyst with the Office of Research, U.S. Department of Education, concludes:

> More than 300,000 youth who might otherwise have joined the military in the next 5 years are likely to become unqualified if current plans for the drawdown are implemented. Most will come from stable, working class and lower-middle-class backgrounds, and almost half will be members of racial or ethnic minorities. The South will feel the greatest impact of the cutbacks: close to half of the newly unqualified will come from that region, and within the South almost two-thirds of the unqualified will be of racial or ethnic minorities. (p. 17)

Opportunities for developmental education seem critical if the American Government decides that DoD does, in fact, have such a mission. In some ways the military likes to assume the role of an unenlightened employer who chooses and retains only those employees capable of doing the job. As an employer, the military would be free to set stringent criteria for promotion and re-enlistment with the full expectations that its employees, on their own, would meet those requirements with little or no effort on the part of the employer. Some argue that education is <u>not</u> the responsibility of the military, but, instead, belongs to the states and localities in which servicemembers are stationed. They contend that servicemembers and their family members should be counted along with other residents of those communities. Except in overseas commands, their education needs should be reflected in state education plans with the Federal government providing assistance to the states to ensure accessibility of military employees to needed educational programs and services. In some respects, this philosophy has been partially put into practice. For example, most states give in-state tuition rates for state and community colleges to all servicemembers stationed in that state regardless as their home of record. The State of North Carolina has traditionally included soldiers at Fort Bragg

in its state education plan. The Fort Bragg Education Program to include the Fayetteville Technical Community College's Developmental Studies effort has benefited greatly over the years because of the planning and close working relationships forged between the military and the state and local education authorities. At other locations attempts at similar efforts have failed. To their credit, however, military leadership, generally, has taken the position that it must "care for its own" and not rely solely on outside agencies to provide education programs and services. Consequently, the military has set aside considerable personnel and fiscal resources for in-service education as previously shown in this paper. Some of these assets could be focused on developmental education.

A third issue deals with resources. Resourcing of developmental education is intertwined with divergent schools of thought on how in-service education funding and personnel resources should be used. The military tends to hide developmental education either under basic skills or college at the associate degree level. Throughout the long history of adult and continuing education in the military, a continuous battle has been waged for "soul" of the voluntary education program and, consequently, its resources. Should education focus on human development and personal aspirations for education, or should education focus on repairing military training and job performance deficiencies? In other words, should in-service education resources be strictly applied only to education programs and services that can demonstrate a direct relationship to a military organizational requirement (preferably in military training and performance readiness arenas) or should in-service education resources support the servicemember in his or her quest for an education? Traditionally, education resources in the military have been used for a discrete mixture of purposes (i.e., support for recruiting, retention and other military personnel management objectives; a supplement to military training; and support of quality of life and human resource development goals). When this balance is broken, in-service education suffers. Hence, fiscal resources designated for implementation of any developmental education initiative must be clearly identified and protected throughout the resource management chain within the military services similar to that done for basic skills during past years. (Anderson, 1992)

A fourth and closely related issue to the one above is the role of leadership development in developmental education. Military commanders generally understand the importance of leadership at all levels in their commands. Many appreciate education as human self-development facilitating leader development. But more operationally-minded military commanders resent and often resist using critically short dollars and staff to

support the transition of servicemembers back to civilian life. They may not, in fact, consider this an essential part of their military mission. They want a tangible payback for the military itself. Over the past several years the Army has done a remarkable job of tying personal self-development education and training initiatives to military goals. The Army has distributed a series of 38 "NCO Leader Self-Development Career Maps." (*SOCAD-2 Handbook*, 1992, pp. 4-43 through 4-95) Appropriate Career Management Field (CMF) proponents developed and fully endorse the NCO Leader Self-Development Career Maps. By these Career Maps, soldiers now know that the Army recognizes and appreciates the importance of their off-duty academic pursuits and support these activities as part of the leader development process. These Career Maps provide CMF college degree goals with suggested timelines for their achievement. For example, for CMF 11 (Infantry), the Career Map suggests that soldiers in this career field have an associate degree in general studies by their 15th year of service and a bachelor's degree in management by their 18th year in service. For Army enlisted personnel, Career Maps could provide the needed motivation to seek out college and, for the academically at-risk, developmental education to help them become college-capable.

A fifth issue deals with identification of prospective developmental studies students. The military services need to make a conscious effort to identify the servicemember who needs developmental skills. Identification of those who need this help from amongst those who express interest in going to college is necessary but inadequate. The military has a need to help servicemembers who fear college, or never even aspired to college work because they understood their academic limitations to achieve higher levels. Whether or not the servicemember continue with his or her education, the Service benefits from a better educated employee. The individual servicemember, who probably joined the military with educational betterment in mind, needs to be identified and helped. Major issues are involved here. An active program aimed at identifying those in need of developmental work, and then providing the opportunity to do that work, would require significant resources. Overworked education centers at installation level might balk. Tuition assistance dollars would have to be found and appropriate programs and services offered. It would be a major policy decision.

Sixth, how to motivate the "developmental student" remains a key issue. Developmental work must be made attractive to the servicemember. Motivation is always a vital factor in education, and the servicemember is not likely to be motivated to learn if confronted with a negative approach. Care must be taken <u>not</u> to make developmental education look like refurbished basic skills. That is not what it is or should be.

Some will insist that the effort needed in developmental education does not fit the realm of postsecondary education. They are neither entirely wrong nor entirely right. But, in the military context, they are not being very helpful. Developmental education needs to be treated as academic preparatory work for college-- dignified as work toward future personal development rather than as repair of a flawed past. This is more than semantical or a matter of "packaging." Allocation of responsibility and resources is involved. The need to coordinate and integrate programs with degree-granting academic institutions suggests that an increased load be placed on the education professionals in the Services and at the colleges serving military installations. At a time of cutbacks and re-ordering of resources and priorities, this is an issue to be resolved.

VI. Prospects for the Future

This is a time of transition in the U.S. military, and in the role of military force in international politics. Much remains to be decided as negotiations about national priorities and the nature of 21st century U.S. military power are debated and determined by events. But it is not too early to see some of the basic outlines of the future. Some tentative conclusions can be made about education in the emerging military.

Almost everyone agrees that the U.S. military will be a smaller force that relies even more heavily on high technology and rapid mobility. In a kind of "post-nuclear" age, military power will continue to be relevant at lower levels of conflict and in wide-ranging scenarios. This trend has important implications for the roles that most junior servicemembers might be expected to play. The potential demands on the recruit of the future are greater because the situations are more varied and complex, the technology more sophisticated and decisive. Fewer human beings will share the awesome responsibilities of combat, even at the level of what in the past was that of a simple Infantryman. .

The Army of the future cannot tolerate the simple soldier. The "grunt" of the past will not be capable of doing the job. This presents recruiting and retention problems of mammoth proportions. Those who joined the nation's military in the past sought upward mobility through education. Many did not *arrive* to start their military training with a "full basic load" of education even though most were high school graduates. They experienced difficulty being integrated into a tight, highly tuned, technically-equipped society. As they came, however, they

hoped to *become* better educated and more equipped to handle life's challenges. They signed away $1200 during initial entry training as a kind of education insurance policy which they expected to draw on to provide education benefits once they got out of the service. That scenario is not changing. If anything, the educational gap between what is and what is required will grow. This is true even as military accessions policy has tightened to restrict access to the military as a pathway for upward mobility to only high school graduates. The real underlying military accessions requirement is recruitment and retention of "college-capable" men and women.

What seems to be happening is that both the context for military service and the recruit is changing. The tactical, technical and leadership demands are increasing faster than the capabilities of the recruits. Military personnel managers understand that they operate in a market economy. They have emphasized the acquisition of recruits who have *earned* a high school diploma. In this way they are assured that these individuals have, in fact, achieved an important goal in life; that is, they have successfully completed a twelve year "tour of duty" called school. By doing this, they also hope that the pool of educated talent being accessed will somehow keep pace with requirements for better educated servicemembers. But AFQT scores bring reality to military personnel management. First, the high school diploma does not equate to mastery of basic academic skills. Second, top high school seniors often do not choose military enlistment. Third, many of the best and most dedicated among minority groups do find the military attractive and, although their AFQT scores may reflect many to be academically at-risk, they serve with courage and distinction. In the past, the military has looked to basic skills development to elevate many servicemembers to acceptable personnel standards. In the future, developmental education aimed at producing servicemembers who are truly college-capable may be key to the military personnel managers' dilemma.

The military needs to ratchet its education programs upward. This means less resources spent on basic skills, but more on a sophisticated, intensive effort at the developmental level as part of postsecondary education. This will, in turn, provide a workable gateway for enlisted personnel, as they grow in seniority, to earn associate and bachelor's degrees that enhance their military duty performance, their competitive edge in military personnel actions such as promotion, retention and job training, and capabilities to transition to civilian careers upon their departure from the military. Developmental courses should logically be "packaged" as college preparatory work and integrated into career planning of the nation's servicemembers for those who need them. At the very minimum, it would serve as real affirmative action.

VII. Conclusions

Developmental education currently available to servicemembers at selected locations appears to be in the mainstream of developmental education in the United States. Generally, however, the military services have not focussed on the need and have not established postsecondary developmental education as a priority element of their education program. Support from military leadership down to local commands is crucial for success in any program implementation.

High school diploma graduates often do not come into the military service as "college-capable" men and women. The military may not have a "literacy problem" but it does have significant percentages of academically at -risk servicemembers. Their lack of reading, writing, other communications skills and mathematics skills deter them from successfully participating in college as well hampering their performance in the workplace and competing in the military personnel management system in a time of personnel reductions and tight promotion quotas. As the military undergoes future changes, deficiencies in developmental skills are expected to having an increasingly adverse impact on the servicemember who has the deficiencies and the military organization to which he or she is assigned or attached.

Servicemembers from minority backgrounds tend to be more likely to have need for development education. Unless appropriate intervention occurs, the data suggest that high percentages of those who are academically at-risk will not draw education benefits from the MGIB, and perhaps not share at all in the American dream through postsecondary educational achievement.

The need for developmental education extends well beyond the military services to the nation as a whole. America is truly a "nation at-risk." Society, like the military, requires a higher level of education for employment and personal success than in the past. This is an information rich , technology-oriented world. The military must keep pace as a pathway to upward mobility for those in the country from disadvantaged backgrounds that join to serve in return for educational opportunity and preparation to be strong contributors as veterans. In this regard, the military must shift from a basic skills mentality for minimum competency to developing college-capable men and women who strive to excel in the workplace and in their personal lives.

Educational resources and planning in the Department of Defense and the various services should be shifted to help academically at-risk servicemembers engage in developmental education that promotes military job performance and development of the servicemember as a college-capable student. Postsecondary developmental work must form the "basic skills" of the new U.S. military.

Innovative approaches are needed to make developmental education both appealing to the servicemember and effective for the military. There is a natural continuum from developmental coursework into lower division college work that should be understood and exploited. A sophisticated approach to developmental skills will emphasize the positive — encouraging the servicemember. Servicemember motivation is another key to success for any developmental program in the military services

New approaches are necessary to encourage the military to focus on developmental education. Educational needs assessments should more clearly identify servicemember needs in this area. Educational planning should recognize those identified needs and set forth programs to accommodate those needs. Education counselors should discuss these needs as they counsel academically at-risk servicemembers and pinpoint them into programs that will allow the servicemember work through his or her developmental education problem. Education centers should begin adjusting their orientations from basic skills to higher order developmental skills. Supporting colleges and universities need to work in consort with the education center staff to implement programs that attract servicemembers and accomplish the mission. Tuition assistance policies should be adjusted to insure that appropriate funding for developmental education is available at each installation to assist academically at-risk soldiers, sailors, airmen, and marines.

VIII. Recommendations

1. That DoD formally recognize the need for developmental education in DoD Directive 1322.8 and sponsor a model program for developmental studies that each military service could modify and implement to meet their Service-specific needs. This model should use the SOCNAVPREP effort as its basis. Desirable features include:

- A means of identifying those needing developmental work in the recruitment process;
- A curriculum that is straightforward and easy to execute;
- A process for documenting desired educational learning outcomes and for recognizing completion; and

• An identification of appropriate support services essential for program success.

2. That each military service develop programs and integrate them into their current educational efforts with a strong connection to voluntary postsecondary education. They should seek ways to foster continuing education after developmental work toward postsecondary degrees, making good on promises for educational opportunity made during recruitment and career counseling.

3. That DoD integrate completion of appropriate developmental Studies into the career planning of servicemembers setting forth concrete requirements and milestones for reaching a minimal level of educational achievement.

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Appendix A

Servicemembers Opportunity Colleges

Introduction

Servicemembers Opportunity Colleges (SOC) is a consortium of national education associations and 1034 colleges and universities pledged to ease the difficulties of servicemembers seeking a postsecondary education. In cooperation with the Department of Defence, the military services and the Coast Guard, SOC works to coordinate between the Department of Defense and the academic community, and to articulate to each the requirements and needs of the other.

SOC is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community Colleges (AACC). Its twelve cooperating higher education associations are the:

- American Association of Collegiate Registrars and Admissions Officers,
- American Council on Education,
- Association of American Colleges,
- Association of American Universities,
- Association of Independent Colleges and Schools,
- Council on Postsecondary Accreditation,
- Education Commission of the States,
- Hispanic Association of Colleges and Universities,
- National Association for Equal Opportunity in Higher Education,
- National Association of Independent Colleges and Universities,
- National Association of State Universities and Land-Grant Colleges, and
- State Higher Education Executive Officers.

SOC's two sponsors, eleven cooperating associations, the military services, the National Guard Bureau, and the Coast Guard each appoint at least one member to the SOC Advisory Board. The SOC Advisory Board offers policy guidance for the operation of SOC and approves the *SOC Principles and Criteria*, which are discussed below.

SOC and its Programs

Colleges and universities that are members of SOC subscribe to *SOC Principles and Criteria* in voluntary higher education programs offered to hundreds of thousands of servicemembers, civilian employees of DoD, veterans, and family members. SOC Principles embody institutional flexibility with thoughtful development of programs and procedures appropriate to the needs of servicemembers, yet recognize the necessity to protect and assure the quality of educational programs.

Following are the Principles upon which SOC is founded:

Principle 1. In order to enhance their military effectiveness and achieve their educational, vocational, and career goals, servicemembers should share in the postsecondary educational opportunities available to other citizens.

Principle 2. Educational programs for servicemembers should rely primarily on programs, courses, and services provided by appropriately accredited institutions and organizations, including high schools, postsecondary vocational and technical schools, colleges, and universities.

Principle 3. To enhance access to undergraduate educational opportunities for servicemembers, institutions should maintain a necessary flexibility of programs and procedures, particularly in admissions, credit transfer, and recognition of other applicable learning, including that gained in the military; in scheduling and format of courses; and in academic residency requirements to offset servicemembers' mobility, isolation from campuses, and part-time student status.

SOC Criteria and Membership

SOC Criteria stipulate that institutional policies and practices be fair, equitable, and effective in recognizing special and often limiting conditions faced by military students. As a minimum, each SOC institution:

(1) designs its transfer practices to minimize loss of credit and avoid duplication of course work;

(2) limits academic residency requirements for active-duty servicemembers to no more than 25 percent of the undergraduate degree program and avoids any "final year" or "final semester" residency requirement;

(3) recognizes and uses the American Council on Education's *Guide to the Evaluation of Educational Experiences in the Armed Services* (*ACE Guide*) to award credit based on military training courses and experience; and

(4) awards credit through the use of at least one nationally recognized, nontraditional learning testing program such as the CLEP, ACT-PEP or DANTES DSST.

The SOC Criteria constitute an operational framework for each SOC college or university to extend to servicemembers' educational opportunities that are sometimes distinct from common institutional practice. The Criteria ensure the flexibility that is essential to improving the access of servicemembers to undergraduate education.

SOC membership is necessary for institutions to offer undergraduate courses on Army installations, and membership is quite commonly required of participants in MOUs with all of the services. Application for membership in SOC includes an affirmation of the institution's compliance with *SOC Principles and Criteria* signed by the institution's president, chancellor or other administrator authorized to assume this obligation. The Director of SOC has the authority to approve or deny membership. (There is an appeals process involving the SOC Advisory Board.) Membership in SOC is renewed every two years and is documented in a biennial publication, the *SOC Guide*. The *Guide* summarizes each institution's policies regarding nontraditional learning, any military installations on which it serves, the name and phone number of a point-of-contact, and provides other pertinent information.

SOC Systems

All of the Services and their personnel, both active and reserve, are served by SOC institutions. In addition to the general protections and services provided by SOC, at the request of the Army, the Army National Guard and the Navy, Service-specific systems and programs have been developed. These systems and programs require extensive articulation among member colleges and universities that offer certificate/diploma, associate and bachelor's degree programs related to the students' military jobs.

In response to these requests for specific, tightly integrated programs, SOC operates four network systems:

- SOCAD-2, the associate degree and diploma/certificate system for the Army and the Army National Guard;
- SOCAD-4, the bachelor's degree system for the Army and the Army National Guard;
- SOCNAV-2, the Navy's associate degree and diploma/certificate system; and
- SOCNAV-4, the Navy's bachelor's degree system.

These systems consist of groups of regionally accredited SOC members that offer degree programs accessible to soldiers and sailors worldwide. Member institutions guarantee to accept each other's credits in transfer. SOCAD-4 and SOCNAV-4 members guarantee a minimum 45% transfer or award of credit for those students who have completed an appropriate SOCAD-2 and SOCNAV-2 associate degree, respectively.

The Networks of SOC's Degree Systems

In order to effect detailed articulation in a meaningful manner, associate degree , bachelor's degree, and certificate programs have been grouped into networks. Each network consists of a number of programs in a specific curriculum area. (See Figure 1 for current SOC diploma/certificate, associate and bachelor's degree networks.) The SOC staff reviews diploma/certificate, associate and bachelor's degree programs offered in support of Army and Navy personnel and places them in networks appropriate to the curriculum. Curriculum exhibits are prepared by SOC based on information provided by the offering institution. These curriculum exhibits are coordinated fully with the offering institution and all the other institutions that offer programs in that network.

Once approved, exhibits are published in the systems' handbooks used by all SOC colleges and universities that are members of the network systems, and by all Army and Navy in-service education officers, specialists and counselors. The specific guarantees, the appropriate transfer courses, recommended credit for military training, work experience, and tests are all listed in the handbooks, which serve as complete operating manuals for their respective systems. Handbooks are updated and published twice annually.

Most of the networks focus on technical and management curriculum areas and were designed to be relevant to servicemembers' military jobs. However, when SOC began development of the SOCAD system in 1978, the Army expressed a requirement for associate degree programs that emphasized general education and nontraditional credit awarded based on the *ACE Guide* and testing in addition to programs that could be

grouped in technical and management networks. In response, SOC established the Flexible Network. Associate degree programs meeting the following criteria were listed in the Flexible Network:

- The institution required no more than 65 semester hours or 97 quarter hours for degree completion in any curriculum offered within the Flexible Network;
- The institution required as prescribed courses no more than 50 percent of the total credits required for the degree completion in any curriculum offered within the Flexible Network;
- The institution included a minimum of 50 percent of the total required hours in learning experiences within the Flexible Network;
- The institution awarded credit for service schools and military experience as recommended in the American Council on Education's Guide to the Evaluation of Educational Experiences in the Armed Services.

The development of the bachelor's degree systems in 1987 required the associate degree systems to articulate 2-year programs into 4-year programs. The Flexible Network contained some associate degree programs that could be articulated into 4-year programs, and some that could not. Therefore, the network was split between those associate degree programs that contained sufficient general education to articulate into 4-year programs and those associate degree programs that did not have the amount and/or the flexibility within their general education requirements to provide guaranteed transferability. The criterion used to split the Flexible Network was a minimum of 30 semester hours or the equivalent of General Education courses, not including Physical Education and Health. Programs that met this criterion formed the new Interdisciplinary Studies Network. Those curricula that did not meet this criterion formed the General Studies Network in SOCAD-2 and SOCNAV-2. No guarantees exist regarding the articulation of the associate degrees included in the General Studies Network with any 4-year program.

The Interdisciplinary Studies Network consists of curricula characterized by flexibility in which General Education courses make up a large portion of the requirements. Each curriculum also contains a large number of general education and free electives. Examples of degree program titles include: Interdisciplinary Studies, Individualized Major, and Social Science. Students who complete an associate degree in any SOCAD-2 or SOCNAV-2 Interdisciplinary Studies curriculum are guaranteed to receive the transfer or award of 45 percent of the degree requirements when enrolling in a bachelor's degree curriculum in either the SOCAD-4 or SOCNAV-4 Interdisciplinary Studies network, within the stated limitations of the specific curricula found in the SOCAD-4 and SOCNAV-4 Handbooks.

A "Contract" between College and Servicemember

A student participating in any SOC degree network may request an official evaluation of all prior learning at any time after he or she is eligible. Institutions may require up to six semester hours of course work with the college or university before an official evaluation is conducted. The request for an official evaluation automatically causes the college or university to issue either a SOCAD or SOCNAV Student Agreement. It is the responsibility of the student to request that all transcripts and other necessary documents be provided the college or university that is conducting the official evaluation. The

institution that conducts the official evaluation and issues the Student Agreement is the "home college" for that soldier, sailor or family member.

The Student Agreement reflects credits awarded or transferred in by the home college based on the student's prior learning. It then serves as the student's academic plan showing precisely what courses and requirement still must be fulfilled. In essence, it is a contract for the degree between the home college and the student.

Guaranteed transfer always moves back to the home college. However, these transfer guarantees are valid only after the Student Agreement is issued. All institutions that are members of SOC network systems have agreed to issue a Student Agreement on the standard SOC form for each student who applies for an official evaluation in a program that is part of a SOC system network.
For the SOC systems to work for the servicemember-students for whom they are designed, it is imperative that home institutions comply with their obligation to issue SOC Student Agreements when their students become eligible for them.

Degree Delivery Options

In blending traditional and nontraditional postsecondary education, SOC continuously identifies and explores educational programs, systems, courses and processes that encourage and assist soldiers and sailors in thinking and acting on their own and in concert with others. High quality independent study and distance learning degree programs offer this type of encouragement and assistance. Their integration into SOCAD-2, SOCAD-4, SOCNAV-2; and SOCNAV-4 systems in 1988 increased student learning opportunities.

Often soldiers and sailors are unable to participate in traditionally delivered courses and programs. Alternative delivery educational programs allow students to participate while being physically at isolated military sites or on board ships around the world.

Currently within the four SOC network systems, three degree delivery options are available:

- **Traditional Delivery Option** consisting of curricula normally provided through classroom-based instruction and requiring some academic residency for graduation.

- **Alternative Delivery Option**, an external degree option, consisting of those curricula in which the college or university delivers instruction through some type of independent study, requiring some academic residency for graduation.

- **Learning Assessment Option** consisting of curricula that require no academic residency or graduation. The degree may be based entirely on college credits derived from evaluation of learning from other sources or transfer of credit from other institutions.

Once degree programs in the Alternative Delivery Option were integrated into the SOC network system, SOC began to identify independent study courses (ISC) that were comparable with traditional courses. These courses have been integrated into the Handbooks. Students are now able to participate in specific ISC courses with full expectation that credits received will fulfill certain degree requirements. SOC works closely with DANTES in ensuring that external degree programs listed in its Guide to

External Degree Programs are integrated, where possible, in SOC's Alternative Delivery and Learning Assessment Options. Likewise, SOC coordinates its independent study course selection with DANTES and cross-references specific courses with *DANTES' Independent Study Catalog*.

Servicemember-students and institutions can be confident that the Alternative Delivery and Learning Assessment Options are, in fact, viable options for offering and receiving high quality education. All colleges and universities in these options are regionally accredited. Their programs are selected because of (1) their relevance to specific SOC networks, (2) the interest of the institution to work with servicemembers and to comply with *SOC Principles and Criteria* and the institutional requirements for membership in SOC's networking systems, and (3) their reputation for meeting the American Council on Education's *Principles of Good Practice for Alternative and External Degree Programs For Adults.*

Even though the academic atmosphere of the traditional classroom with its face-to-face interpersonal contacts may be lost or lessened through the alternative delivery or learning assessment options, this methodology may help student-servicemembers develop into "autonomous learners." One of adult education's primary goals is to encourage adult students become autonomous learners while empowering them with knowledge, skills and understanding needed for working and living in society.

Colleges and universities in the traditional delivery option blend credits earned through nontraditional methodologies into relatively traditional classroom-based degree programs, and external degrees earned through distant learning methodologies blend credits from traditional classroom instruction into nontraditional degree programs. For many servicemembers and veterans, nontraditional programs are the programs of choice. Their integration into an overall networking system is important for the military student.

National Guard Outreach Program

In the active forces, the education center on the military installation is the focal point for servicemembers to access the educational process. It is there that a servicemember goes to obtain counseling, financial aid, and referral to a college or university that can meet his or her educational needs or aspirations. Reservists face a different situation. Many of these "weekend warriors" go to an armory or reserve center once a month for Saturday and Sunday training and then serve a two-week active-duty period each year. Until the 1980s, civilian educational opportunities for reservists and National Guard personnel were simply not part of the military agenda. In the early 1980s the Army Plan called for the extension of the the Army Continuing Education System to the Reserve Component. This included tuition assistance for postsecondary programs. In addition, the Montgomery G-I Bill included provisions for members of the Reserve Components to participate, but at a reduced rate.

In 1990, each state adjutant general's office has a designated "education services officer" to assist guard personnel within that state with their educational activities. In some states this ESO has a small staff. Each Continental Army has some education infrastructure that generally extends down into the major reserve units. Many battalion-size units have an NCO appointed as education services officer as an additional duty. These NCOs often have little training in education, and limited time and educational resources. Tuition assistance funding for Reserve Components is uncertain after fiscal year 1990. Consequently, the fledging beginning of voluntary educational development of these servicemembers has been tenuous at best. To further complicate this situation, colleges

and universities not located near active military installations often are unaware of these servicemembers and their special educational needs. These institutions are not likely to recognize reserve servicemembers as potential candidates for their continuing education programs. They are often unfamiliar with the blending of traditional and nontraditional education opportunities that has proven successful with active servicemembers.

In February 1989, SOC, working closely with the National Guard Bureau, set about rectifying this situation within the Army National Guard (ARNG) by establishing the SOC ARNG Outreach Program. Initially focusing on recruiting colleges and universities for SOC membership in seven states, several strategies were tried. Working through the central office, a highly qualified education specialist from the SOC staff conducted SOC workshops for representatives of colleges and universities targeted for participation in the Outreach initiative. In addition, State ESOs arranged visits to key institutions' campuses where the SOC specialist and the ARNG ESO, together, presented the SOC story to presidents, vice presidents, and /or deans and solicited these institutions' interest in serving the National Guard soldier. In each workshop and meeting the emphasis focused on the recognition and use of the ACE Guide and the award of appropriate credit for learning demonstrated through standardized tests such as CLEP, ACT/PEP, and DSST. While reasonable transfer of credit practices and limitations on institutional residency requirements remain important, they become secondary to the actual blending of academic credits earned through accepted nontraditional methods into traditional degree programs for ARNG students .

The Outreach Program encourages the use of the Montgomery G-I Bill, degree planning and, where possible, the use of SOC Student Agreements that serve as contracts for degrees between colleges and the ARNG students. The SOC Principles and Criteria are recognized as the common framework in which postsecondary institutions address educational needs of the military student whether active, reserve, veteran or adult family member. During 1990, the Outreach Program expanded to include ten additional states. The message of the SOC model has begun to permeate higher education well beyond the boundaries of active military installations.

Concurrent Admissions Program (ConAP)

In 1989, SOC launched a program designed to reach the prospective Army recruit. The Concurrent Admissions Program, better known as ConAP, was an undertaking by the higher education community and the Army Recruiting Command to increase college enrollment of veterans by pre-enrolling new soldiers in a college or university of their choice concurrent with their enlistment in the Army.

ConAP began as a pilot effort in the 11 northeastern states and the District of Columbia with the 1st U.S. Recruiting Brigade. Army recruiters refer prospective soldiers to participating colleges and universities in their home communities. Eligible recruits are admitted on a full or provisional basis, with admission deferred until completion of active military service. Provisional admission means that admission is guaranteed but that the student may be required to take certain foundation courses or undergo other academic preparation as determined by the college and may be limited in the number of courses undertaken. The student is subject to the college catalog in effect at the time of enrollment in classes at the college. The agreement is in effect for two years following completion of active military service. Both the Army and the college maintain contact with ConAP soldiers during their military service to encourage off-duty study and to bond soldiers with their ConAP college. In essence, the new ConAP soldier begins his or

her Army service with a "home college" and a definite plan to enroll in college using the Montgomery GI Bill.

All accredited colleges and universities in the United States have been encouraged to participate in ConAP. To participate, they must subscribe to the *SOC Principles and Criteria* and become a member of SOC. This assures ConAP soldiers that their specific "home college" will blend the academic credits earned while in the military, either by traditional or nontraditional means, with their degree programs after leaving the Army. Again, similar to the ARNG Outreach, ConAP is helping spread the SOC model throughout the higher education community. In 1992, ConAP has been extended to the Army National Guard. This is intended to help the National Guard attract a higher percentage of recruits who are college capable (Mental Category IIIA and higher.

Servicemembers Opportunity Colleges Education Program (SOCED)

SOCED is a program designed to help soldiers and sailors begin preparing for a new career in teaching while they are still on active duty. This is a DoD program that will initially be integrated into SOCAD-4 and SOCNAV-4. SOCED was officially launched with the publication of the Fall 1992 SOCAD and SOCNAV Handbooks. SOC has compiled a list of eight core course that are basic to most teacher preparatory programs regardless of which state, grade level or subject a future teacher chooses. The "SOCED CORE" follows:

U101 Education Psychology
U114 Foundations of Education
U130 Introduction to Education
U131 Human Growth and Development
U132 Strategies of Teaching
U133 Learning Theories
U134 Classroom Management
U140 Computers in Education

The eight courses of the SOCED CORE standing alone constitutes a non-degree program. Thirty-nine colleges and universities have indicated a willingness to participate in this effort. Its purpose is to provide a selection of professional education courses that will be useful in most certification programs and whose transferability is guaranteed within the SOCED CORE non-degree network. Some notes of caution: all colleges do not offer all courses; state certification programs require different combinations of courses; and, rarely will all eight be required by any one certification program.

SOCNAVPREP

SOCNAVPREP is a pilot developmental education effort sponsored by the Navy beginning in FY 1992. It is designed for the sailor who, although a high school graduate, is not quite ready for college. Some sailors already take developmental courses at local community colleges to bridge the gap into college level courses. But many do not. Existing programs are often viewed as remedial rather than developmental. Many sailors are not even aware that such developmental courses exist. The challenge for SOCNAVPREP is first to identify and target sailors who, on their own, would not be knocking on Navy Campus or College doors and, secondly, to motivate and encourage these sailors to take advantage of SOCNAVPREP opportunities.

SOCNAVPREP is an attempt to "package" developmental courses into a more positive context that focuses on preparation for college rather than on remediation of basic skills. The program leads to a college preparatory certificate signed by the College and the sailor's Commanding Officer. This positive focus and recognition of achievement should encourage more sailors to take that first step toward a college degree.

Much of the effort to identify and motivate this new segment of sailor population, that is, those who have not yet approached Navy Campus or the colleges, lies with the local command to which the sailor is assigned or attached. Commanding Officers, Command Career Counselors and local Education Services Officers are being made aware of this college preparatory program. They, in turn, must make it clear to the sailor that education benefits the servicemember both in terms of self development and career enhancement.

Veterans Outreach Capabilities

Although no formal veterans' outreach program currently exists within SOC, civilian SOC institutions provide veterans returning to civilian life appropriate evaluation of their training, experience, and prior study similar to that afforded active and reserve servicemembers. SOC Principles and Criteria recognize the continuing educational needs of veterans by having SOC institutions:

- encourage veterans to continue or complete study started during service or interrupted by duty requirements;
- offer opportunities to veterans similar to those extended to servicemembers under the SOC Criteria, including provision of information and counseling services to ensure that veterans are aware of the benefits, regulations and potential problems of veterans' assistance programs;
- comply with the provisions of 38 USC 1775 on veterans' assistance programs; and
- provide veterans, previously admitted as SOC students, with opportunities to complete their programs under the conditions of their Student Agreements. (*SOC Principles and Criteria, 1993-94,* p. 7)

For example, if a veteran has a Student Agreement executed while on active-duty, he or she may be able to attend a local institution to complete associate or bachelor's degree requirements, even if the local college is not a member of the SOC consortium. The SOC "home college" that initiated the Student Agreement should be disposed to accept the credits, though some require approval in advance. If the veteran has completed all the academic residency requirements of his or her "home college", then degree completion with that "home college" should be relatively simple. A few colleges do have a time limit on degree completions, however. Hence the veteran should maintain contact with the "home college" to ensure a full understanding of the academic and administrative requirements and limits regarding the Student Agreement.

Many colleges will work closely with the veteran and will use the Student Agreement. If the local college is a SOC member, it will award credit for Army service school courses based on the ACE Guide. It may also award credit based on the veteran's military experience (MOS). Veterans are advised to search out a Veterans Counselor or a SOC Counselor or representative at their local college and, as a minimum, to inquire with the

college's admission officer or registrar about possible credit based on their military training and experience.

Adult Family Member Outreach Capabilities

SOC has no formal outreach to adult family members of servicemembers. Nevertheless, it does recognize the postsecondary education needs of this large segment of the military community. As previously noted, the enlisted force in all the military services includes over a million adult family members (*Defense 92* p. 31). Often these people have both the time and the inclination to participate in educational programs. Many supporting colleges and universities rely on adult family members to comprise numbers sufficient to justify offering specific courses on a military installation.

Adult family members are subject to many of the same adverse circumstances that their military sponsors face, such as frequent moves. They also need to blend traditional and nontraditional educational opportunities into credible degree programs. One major additional hurdle is funding. Since adult family members are not eligible for tuition assistance through the military and generally are not entitled to veterans' educational benefits, they must pay full tuition, fees and book costs out-of-pocket or through grants, loans, or scholarships obtained through the civilian sector. Adult family members need counseling, degree planning, financial aid, and availability of programs tailored to meet their needs and educational aspirations.

In recognition of adult family member educational needs, all SOCAD-4 and SOCNAV colleges and most SOCAD-2 colleges accept family members on the same basis as military students. They are given official evaluations, issued SOC Student Agreements and provided the same transfer guarantees granted soldiers and sailors. These institutions advise adult family members regarding academic matters and financial aid. Some of them, such as Park College, offer scholarships to particularly worthy adult family members to encourage their educational development. Many within the military services understand that the welfare of adult family members is directly tied to servicemembers' retention and job performance. Postsecondary educational opportunities are factors that contribute to a positive living environment for servicemembers.

SOC Management

The SOC Director and current staff of thirteen employees and three consultants comprise the SOC office, which is located at Suite 700, National Center for Higher Education, One Dupont Circle, NW, Washington, DC. SOC is an integral part of the American Association of State Colleges and Universities (AASCU). Funding for SOC is provided by contract with DANTES, on behalf of Department of Defense and the Services.

The professional civilian staff of SOC provides the expertise, the flexibility to meet changing mission requirements, and the dedication to high quality adult and continuing education needed to serve as principal advocates for education in American society today. The SOC Director and staff have the following functions:

- Review and recommend modifications to the SOC Principles and Criteria to reflect changes or expansion of SOC's mission, and work with the SOC Advisory Board and DoD to gain approval of these changes.

- Develop networking systems for degree programs in traditional delivery, alternative delivery and learning assessment options.

- Produce the publications required to sustain SOC and its degree programs (Handbooks, workbooks, and Guides).

- Develop and maintain data bases to support education management efforts and specific degree networks and programs.

- Conduct training workshops to inform military education and civilian academic personnel about SOC and its programs.

- Conduct an assessments of higher education programs, identify model efforts, pinpoint weaknesses and problem areas, and develop recommendations for improvement.

- Develop, produce and distribute information newsletters, pamphlets, posters and other items to inform servicemembers and others about SOC.

- Provide an "on call" capability to respond to requests for assistance from field education specialists or users of SOC education programs or services.

- Represent SOC at meetings of educational organizations and associations, to keep the education community informed about SOC and to promote acceptance of SOC Principles and Criteria.

- Coordinate and participate in advisory groups, panels, etc. to provide service, guidance, or information on education issues, when requested by the military services, DANTES, or DoD.

The SOC model incorporates essential elements for program management of higher education. These include:

- A uniform, articulated code of good educational practice subscribed to by educational institutions offering similar educational programs and services;

- Encouraging compliance with this code of good educational practice among supporting institutions;

- Systematic availability of informed education counseling and program planning (documented in a written agreement between an educational institution and each student);

- Collection and analysis of data to assist in determining program cost benefit;

- Training of those involved in the operation and administration of higher education programs;

- Information gathering and distribution (emphasizing the availability of educational opportunities and ways to take advantage of them); and

- Facilitation, coordination, information feedback, and troubleshooting capability.

The SOC model has possible applications to business and industry as well as other federal sectors besides the military. As organizations and agencies look for ways to improve their adult learning opportunities, the SOC model may prove useful for :

(1) improving communications between the higher education community and the user organizations;

(2) blending of traditional and nontraditional education;

(3) understanding of the responsibilities and functions for all parties concerned;

(4) networking degree programs; and

(5) troubleshooting problem areas and implementation weaknesses.

SOC Performance

SOC has been successful at getting a wide range of traditional and nontraditional institutions to generally accept the Principles and Criteria, and to recognize the special traits of the military adult learner. It must be acknowledged that many of the over 1034 SOC schools choose to be content with this general adherence to principle and do not actively seek out opportunities to serve the military constituency. Other schools are far more active contributors. There is room for all of them. As a group they comprise the critical mass needed to support the array of programs described in this section. (A college focusing its efforts on ConAP, for example, might lean more toward the traditional than if it were an active participant in the SOCAD system. Both schools are making valuable contributions, in consonance with the needs of their military constituencies.)
(Figure 1 shows, among other data, several ways to look at SOC institutions.)

Participation in SOC degree programs is gathering momentum. There is a steeply rising curve of newly-initiated "contracts," or Student Agreements between SOC schools and active-duty servicemembers. This trend continues through FY 1992 with 34,519 SOC Student Agreements being submitted. (See Figure 2 for SOCAD and SOCNAV Student Agreements annually submitted.) .

In a 1987 research study of perceptions and attitudes of participating soldiers in SOCAD, Frederick Copeland found 85% of the SOCAD participants reported that they were "satisfied" or "very satisfied" with the overall operation of the system. The same percentage of participants indicated satisfaction with the educational services provided by SOCAD colleges. One-fourth of the respondents agreed that involvement in SOCAD had encouraged them to stay in the Army. Copeland concluded from his research that the SOCAD system "was perceived by the respondents to be very effective and highly respected program that is meeting its goal of providing soldiers the opportunity to earn associate degrees in selected technical areas" (Copeland, 1987, pp. ii,iii).

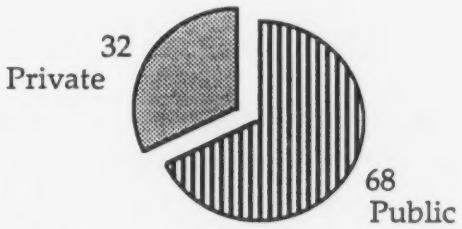
In the 1989 DoD-funded study on Problems Faced by Military Personnel in Pursuing Higher Education Program, the American Council on Education in consort with AASCU, AACC and AACRAO, found a "surprisingly low profile of Servicemembers Opportunity Colleges (SOC) programs" and urged postsecondary education institutions and associations to join SOC and adhere to SOC principles (Stewart, et al, 1989, p.2).

Figure 1

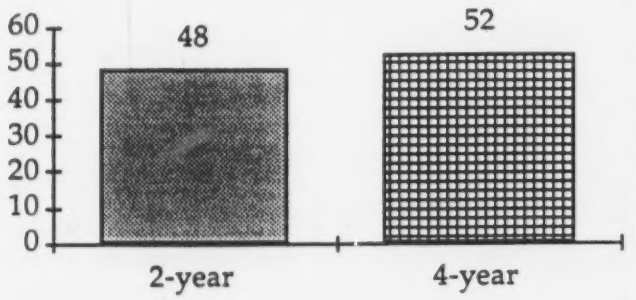
SOC Facts & Figures

1,034 SOC colleges and universities in the fall of 1992

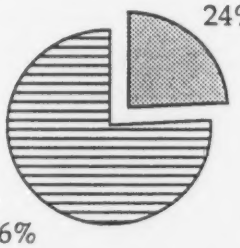
Percent Public and Private



Percent of 2- and 4-Year Colleges



MOS/Rate & Rating



No credit for MOS/Rate & Rating

Credit for MOS/Rate & Rating

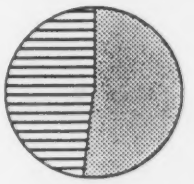
All SOC colleges give credit for Service Schools as a condition of membership.

Note: Many colleges shown as not giving credit for MOS/Rate & Rating or tests actually responded "No set policy" and often grant credit.

96% award credit for CLEP Subject Exams

85% award credit for CLEP General Exams

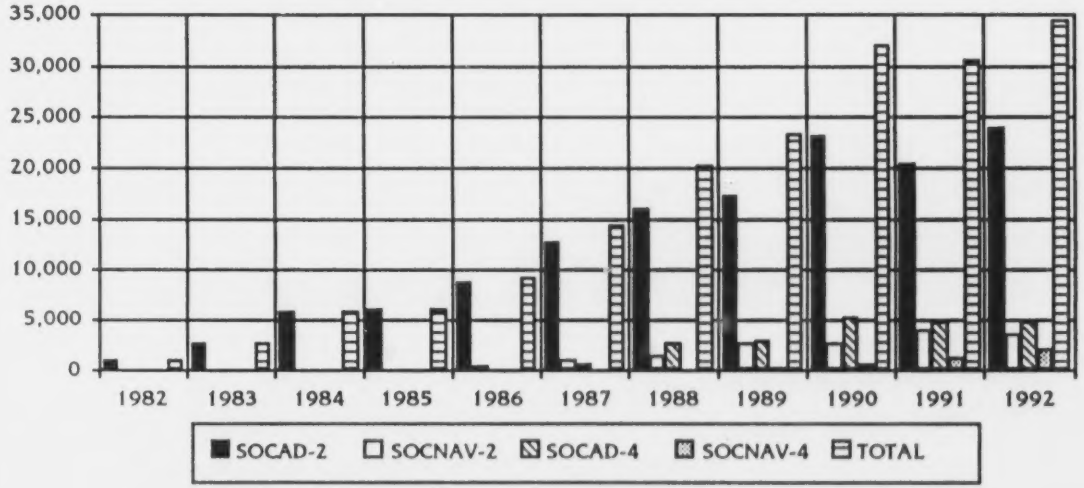
67% award credit for DSST Exams



48% award credit for ACT/PEP Exams

Credit for national testing programs

SOCAD and SOCNAV



Student Agreements Annually

FY/SYSTEM	SOCAD-2	SOCNAV-2	SOCAD-4	SOCNAV-4	TOTAL
1982	985	NA	NA	NA	**985**
1983	2,730	NA	NA	NA	**2,730**
1984	5,833	NA	NA	NA	**5,833**
1985	6,084	NA	NA	NA	**6,084**
1986	8,761	486	NA	NA	**9,247**
1987	12,615	1,097	661	NA	**14,373**
1988	15,959	1,437	2,717	NA	**20,113**
1989	17,352	2,812	2,876	190	**23,230**
1990	23,159	2,831	5,149	732	**31,871**
1991	20,429	4,058	4,837	1,268	**30,592**
1992	23,849	3,664	4,825	2,181	**34,519**
TOTAL	**137,756**	**16,385**	**21,065**	**4,371**	**179,577**

D,ata current through 9/30/92 DRE

Army combined total: 158,821 Navy combined total: 20,756

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Developmental Course Descriptions from Catalogues of Selected Colleges and Universities that Actively Support the DoD Voluntary Education Program 1992

Anne Arundel Community College
Central Texas College
Chapman University
City Colleges of Chicago
Columbia College
Florida Community College of Jacksonville
Georgia Military College
Limestone College
Mississippi Gulf Coast Community College
Mohegan Community College
Park College
Pensacola Junior College
Phillips Junior College of the Mississippi Gulf Coast
Shelby State Community College
Tidewater Community College

The courses descriptions listed herein are examples of courses offered by selected colleges and universities that have an active role in providing educational support for servicemembers, especially sailors.in the areas of:

- reading and study skills,
- mathematics,
- writing, and
- computer information systems.

Many other institutions provide developmental educational support for the DoD Voluntary Education Program.

ANNE ARUNDEL COMMUNITY COLLEGE

RDG 011 (EM)
READING AND STUDY SKILLS
(3 noncredit load hours)
Three hours weekly; one semester.

This basic course, open to all students, increases their academic effectiveness by emphasizing methods of study (test taking, note taking, systematic textbook reading), reading comprehension, reading rate and vocabulary development.

CENTRAL TEXAS COLLEGE

DSCO 0300 Developmental Communications (1-2) Credit: 3
A course offered in a laboratory setting to improve reading comprehension and rate and word recognition. Specific areas of study include syllabication, phonetic analysis, context clues, word elements, sequence, setting, main ideas, drawing conclusions, and making inferences.

DSED 0300 College Study Skills (3-0) Credit: 3
Designed for improvement of study systems. Emphasis is placed on high level study skills and the improvement of time management, effective listening and note taking, marking tests learning through media, concentration, retention of information, and taking examinations.

DSED 0301 College Study Skills and TASP (1-2) Credit: 3
This course is designed to provide an opportunity for students to learn and adopt new methods to become successful in school and life. Emphasis is placed on high level study skills and the improvement of time management, effective listening and note taking, learning through media, concentration, retention of information, taking examinations, creativity, and relationships in life.

DSRE 0101 Developmental Reading (1-1.5) Credit: 1
This course helps prepare for college level academic work. It uses varied instructional techniques to help students improve their proficiency in reading comprehension and rate, word recognition and vocabulary development.

DSRE 0300 Developmental Reading I (1-2) Credit: 3
Designed for students who have difficulty reading college texts, specifically those who score below 50% on the Pre-TASP reading section. Emphasizes word attack skills, vocabulary development, comprehension, fluency, and study and test-taking skills.

DSRE 0301 Developmental Reading II (1-2) Credit: 3
Designed for students who have difficulty reading college texts, specifically those who score from 50% through 69% on the Pre-TASP reading section. Emphasizes vocabulary development, comprehension, fluency, and study and test-taking skills.

CHAPMAN UNIVERSITY

Ed 99 Academic Reading and Study Strategies: Freshman Seminar Students ONLY
An individualized, developmental program designed to improve critical reading, critical thinking, and study strategies. An adjunct course in which students can apply strategies learned to the meaningful, authentic material in their degree program courses. Open to all students and required of all freshmen unless waived by SAT, ACT, or Nelson-Denny. (Offered every semester.) 2 non-degree credits.

Ed 99 Academic Reading and Study Strategies: Students NOT enrolled in Freshman Seminar
An individualized, developmental program designed to improve critical reading, critical thinking, and study strategies. An adjunct course in which students can apply strategies learned to the meaningful, authentic material in their degree program courses. Open to all students and required of all transfer students unless waived by SAT, ACT, or Nelson-Denny. (Offered every semester.) 2 non-degree credits.

CHICAGO CITY WIDE COLLEGE

Reading 001
Basic Reading Skills—A preparatory reading course covering basic comprehension and decoding skills. Three periods per week. *3 credit hours.*

Reading 015
Reading—English as a Second Language (Formerly Advanced Reading—English as a Second Language)—Designed to complement work of English 091 and Speech 089. Emphasis on vocabulary development, understanding idioms, and reading comprehension. *Prerequisite:* Placement test and interview and concurrent enrollment in English 091 and Speech 089. Three periods per week. *3 credit hours.*

Reading 099
Developmental Reading Skills I (Formerly Reading Skills)—Provides skills necessary for efficient reading of textbooks and other materials. *Prerequisite:* Placement test or consent of department chairperson. Two or three periods per week. *2 or 3 credit hours.*

READING & STUDY SKILLS

COLUMBIA COLLEGE

ENG 100 College Reading Skills **3 hours**
For students who need increased efficiency in reading. Includes improvement in comprehension, vocabulary and rate of reading. Offered Fall.

FLORIDA COMMUNITY COLLEGE OF JACKSONVILLE

REA 0008 Reading Skills **4 cr.**
(College Preparatory Studies Course)
(This course does not apply toward the associate degree)
Prerequisite: satisfactory score on MAPS test. This course is a fundamental reading course that utilizes a thematic approach to presenting the reading skills. Vocabulary, comprehension, learning strategies and essential study skills are presented through a wide range of interdisciplinary readings centered around a specific content. REA 0008 is designed for those who do not have reading placement scores high enough to enter REA 0010. Students must satisfy appropriate exit level to successfully complete this course. Four contact hours.

REA 0010 Introduction to Reading Techniques **4 cr.**
(College Preparatory Course)
(This course does not apply toward the associate degree)
Prerequisite: REA 0008 or satisfactory score on MAPS test. This reading course, designed to develop each student's reading skills, emphasizes the basic reading skills. This course uses a diagnostic/prescriptive approach to strengthen individual skills in vocabulary and comprehension. This course is designed for those students who do not score high enough on the reading placement test to enter REA 1105. Individualized work provides self-paced practice in specific skills. Four contact hours.

GEORGIA MILITARY COLLEGE

(Institutional Credit)
DSR 097 Developmental Studies Reading I **5 quarter hours**
This course focuses on improving basic reading skills in vocabulary, comprehension, and reading rate. Prerequisite: Placement by examination and recommendation of Developmental Studies Chairman.

(Institutional Credit)
DSR 099 Developmental Studies Reading II **5 quarter hours**
This course, an extension of DSR 097, concentrates on the same skills as DSE 097, with increased emphasis on reading rate and reading in various content areas. Prerequisite: DSR 097 or placement by examination and recommendation of Developmental Studies Chairman.

LIMESTONE COLLEGE

090 Developmental Reading and Study Skills
The Learning Laboratory is designed to provide special instruction in reading and study skills for those students who are identified as having deficiencies in these areas. A student required to take English 090 must enroll in the course during his/her first semester on campus and must be continuously enrolled until the proficiency level is reached. Grading is on a Satisfactory/Unsatisfactory basis. Credit awarded for the course will not count toward hours needed in completing graduation requirements. After successful completion a student must immediately take English 101. Credit, 3 hours.

MISSISSIPPI GULF COAST COMMUNITY COLLEGE

REA 1103—Developmental Reading. This course is designed to help students who demonstrate lack of proficiency in reading at the college level. Emphasis will be placed on developing basic reading skills, vocabulary, thinking, listening, and comprehension of sentences, paragraphs, and longer items. Additional lab work may be required. (3,3,0)

REA 1213—Reading and Study Skills. This course is designed to help students improve their reading skills in both speed and comprehension and to develop their study skills. (3,3,0)

MOHEGAN COMMUNITY COLLEGE

READ 075 Effective Reading **3 semester hours**
A course designed to improve reading comprehension skills. It is particularly effective for returning students who have been out of school for some time or high school students who have had difficulty understanding textbook material. Concentration is on vocabulary skills and comprehension skills such as: understanding paragraph patterns, finding main ideas, inferring ideas, using figurative language, identifying biased writing, and following an author's pattern. A highly concentrated course for the determined learner. (Course does not count towards the minimum requirements for graduation.)

READ 076 Reading Foundations **4 semester hours**
A course designed for those who need to read more effectively in college. Attention is given to improving reading comprehension skills such as: understanding paragraph patterns, finding main ideas, inferring ideas, using figurative language, identifying biased writing, following author's patterns, taking lecture and textbook notes, and learning test-taking techniques. This course is part of the Foundations Program taken concurrently with Math and English Foundations. Since the reading course is equal in time to two regular sections, it is intensive and should only be taken by those who can devote 16 class hours per week to the four courses. Generally, this course is open to those recommended by placement testing. Others may enter by seeing counselors or a member of the foundations team. (Course does not count towards the minimum requirements for graduation.)

READ 095 Learning Applications **3 semester hours**
A course designed to help students recognize and develop strategies for coping with specific disabilities in meeting college demands. Students will be expected to apply newly learned strategies to material and assignments from their other courses. This course builds on and individualizes the study strategies and writing processes taught in Foundations and study skills courses. (Course does not count towards the minimum requirements for graduation.) Prerequisite: Consent of instructor.

READ 110 Study Skills **3 semester hours**
A course designed for those who have the necessary comprehension skills needed to read college materials (see READ 075) but need specific techniques in lecture note-taking, textbook note-taking and taking objective and essay tests. Emphasis is placed on the active application of these and other study skills to actual academic requirements.

PARK COLLEGE

DV 101 **Introduction to College Study Skills** 3 cr.
Provides students with strengthening skills necessary for success in college classes. Emphasizes basic communication skills. Students will learn to read textbooks and library materials, listen to lectures, write examinations, speak in class discussions, and give oral reports. VA benefits might not be available for this course.

DV 102 **College Reading Improvement** 3 cr.
A course for the student who needs individualized instruction to improve reading comprehension and vocabulary skills. The course will include instruction in basic study skills, note taking and test taking. VA benefits might not be available for this course.

PENSACOLA JUNIOR COLLEGE

REA 0001 College Preparation/Reading.
This is a basic course designed to increase a student's reading comprehension and vocabulary. This course will provide basic skills in word usage, or vocabulary pronunciation, as well as application of these skills to reading comprehension.

REA 0010 Reading Laboratory. 2 hours (all).
Corequisite REA 0002. A reading course required for students reading between grade levels of 8.0 and 9.9. It emphasizes vocabulary, reading speed, comprehension, and study skills.

REA 0002 Reading Review. 3 hours, 3 credits (all).
Corequisite: REA 0010. Prerequisite REA 0001 or placement test score. A reading course required for students reading between grade levels of 8.0 and 9.9. It emphasizes vocabulary, reading speed, comprehension, and study skills.

REA 1105 Reading. 3 hours, 3 c.c. (all).
Corequisite: REA 1105L. Prerequisite: REA 0002 or placement test score. Required for students reading between 10.0 and 12.0 grade level. It is also an elective for anyone wishing to improve reading, studying, and listening skills. Vocabulary, reading comprehension, and reading speed are emphasized.

REA 1105L Reading Skills Laboratory. 2 hours 1 c.c. (all).
Corequisite: REA 1105. Provides self-paced, individualized instruction in reading comprehension, vocabulary development, increasing reading rate, and study skills.

READING & STUDY SKILLS

PHILLIPS JUNIOR COLLEGE
of the MISSISSIPPI GULF COAST

SHELBY STATE COMMUNITY COLLEGE

READ 0700 3 Basic Reading I
Basic Reading is a competency-based course designed to develop skills in finding the main ideas, getting word meaning from context, identifying supporting details and sequence of events, drawing conclusions, making accurate inferences, and understanding cause-effect relationships. 3 Hrs. Lecture

READ 0710 3 Basic Reading II
A course designed to develop competencies for reading materials written at the next higher level to Basic Reading and to assist the student in building skills in application of reading to writing. Prerequisite: READ 0700 3 Basic Reading I or demonstrated proficiency on the placement examination. 3 Hrs. Lecture

READ 0800 3 Developmental Reading
A course designed to develop competencies for reading materials written at the college entry level. Prerequisite: READ 0710 3 Basic Reading II Reading or demonstrated proficiency on the placement examination. 3 Hrs. Lecture

***STSK 0720 3 Basic Study Skills**
Orientation to the purposes, policies and services of Shelby State; a survey of library use skills; assistance for students in developing the skills necessary for successful college work. Course includes a required tutoring component. Group and one-on-one tutoring sessions required. 3 Hrs. Lecture

***STSK 0820 3 Developmental Study Skills**
Development and awareness of skills necessary for successful completion of college-level courses. Orientation to the purposes, policies, and services of the College will be provided. Group and one-on-one tutoring sessions required. 3 Hrs. Lecture

*Study Skills (Basic or Developmental) is a one-time three (3) hour requirement that should be taken either at the Basic or the Developmental level. Placement is determined by the following criteria: Students enrolled in three or more basic courses should register for Basic Study Skills. Students enrolled in two or less basic courses should register for Developmental Study Skills.

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TIDEWATER COMMUNITY COLLEGE

ENG 05 Reading Improvement II **(1-6 cr.)**

Helps students read critically and increase appreciation of reading. Guides students in making inferences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Variable hours per week.

STD 195 Study Skills

This course is designed to teach students the necessary study techniques for college success. Topics include time management, note taking, how to read and outline textbooks, preparing for and taking tests, and listening.

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ANNE ARUNDEL COMMUNITY COLLEGE

MAT 010 (EM)
PRE-ALGEBRA
(2 noncredit load hours)
Two hours weekly; one semester.

A study of pre-algebra and beginning algebra topics such as arithmetic of signed numbers, literal expressions, first degree equations and factoring. Attention will be given to study skills. This course is intended for those students who have no experience in algebra or who are very weak in algebra. The student with this background should take this course prior to MAT 011.

MAT 011 (EM)
BEGINNING ALGEBRA
(4 noncredit load hours)
Four hours weekly; one semester.

A study of beginning algebra topics such as sets and set operations; the associative, commutative and distributive laws; arithmetic of signed numbers, fractions and rational and irrational numbers; simplifying exponential forms, literal, radical and rational expressions; polynomial products and factoring; solving single variable linear and quadratic equations; solving systems of two variable equations; and graphing on the Cartesian coordinate system.

Prerequisite: Achieving an appropriate score on the mathematics part of the ACT or SAT, or completion of MAT 010 with a grade of at least C or scoring at an appropriate level on the Mathematics Placement Test.

MAT 012 (EM)
INTERMEDIATE ALGEBRA WITH GEOMETRY
(4 noncredit load hours)
Four hours weekly; one semester.

A study of intermediate algebra topics such as algebra of polynomials; binomials; binomial expansion; linear functions; linear, quadratic and radical equations; linear inequalities; and complex numbers. Geometry topics include triangles, lines, planes, Pythagorean Theorem, perimeters, areas and volumes.

This course is required for students who receive a grade of C in MAT 011 and is recommended for students who desire subsequent enrollment in MAT 151.

Prerequisite: Achieving an appropriate score on the mathematics part of the ACT or SAT, or completion of MAT 011 with a grade of at least C or scoring at an appropriate level on the Mathematics Placement Test.

MAT 020 (E)
ARITHMETIC
(1 noncredit load hour)
Two hours weekly; seven and one-half weeks.

A study of arithmetic topics such as whole numbers, fractions, decimals, ratio and proportion, percentages, measurement and signed numbers. Students must pass comprehensive chapter tests satisfactorily in order to pass the course.

CENTRAL TEXAS COLLEGE

DSMA 0101 Basic Developmental Mathematics (1-1.5) Credit: 1
This course helps students prepare to pursue college-level academic work. It uses varied instructional techniques to identify deficiencies and provide a review of fundamental operations in mathematics.

DSMA 0102 Developmental Mathematics Lab (0-3) Credit: 1
This course provides a setting for students to develop and expand mathematical problem solving skills in a structured environment under the tutelage of an instructor.

DSMA 0300 Developmental Mathematics I (4-0) Credit: 3
A remedial course includes adding, subtracting, multiplying, and dividing fractions, decimals, and integers, order of operations, percent, line graphs, bar graphs, pie graphs, pictographs, areas of plane figures, exponents.

DSMA 0301 Developmental Mathematics II (4-0) Credit: 3
Designed for students who need a review of fundamental algebraic operations. Topics include operations on real numbers, polynomials, linear equations, linear inequalities, factoring, and selected stated problems. (Previously numbered MATH 0300)

DSMA 0302 Developmental Mathematics III (1-2) Credit: 3
Developmental mathematics for technical fields, including algebra, integers, mathematical sentences, rational numbers, and polynomials.

CHAPMAN UNIVERSITY

Math 99 Intermediate Algebra
Topics include real numbers, linear equations, inequalities, systems of equations, polynomials, fractional expressions, exponents, and quadratic equations. (Offered every semester.) 3 credits.

CHICAGO CITY WIDE COLLEGE

Mathematics 001
Basic Arithmetic Skills—A course designed for those who need extensive work in basic arithmetic operations. Materials are at an elementary level. Three periods per week. *3 credit hours.*

Mathematics 089
Arithmetic Skills—Arithmetic operations using whole numbers, common fractions and decimal numbers: estimating and rounding; ratio, proportion and percent problems and applications, including use of metric system; arithmetic of signed numbers. *Prerequisite:* Placement test or consent of department chairperson. Three periods per week. *3 credit hours.*

Mathematics 100
Fundamentals of Arithmetic and Algebra—Review of arithmetic: decimals, percents and common fractions with applications; introduction to algebra, including signed numbers, linear equations, polynomial operations and graphing. *Prerequisite:* Placement test or C or better in Mathematics 089 or consent of department chairperson. Three periods per week. *3 credit hours.*

MATHEMATICS

COLUMBIA COLLEGE

MATH 105 Introductory Algebra **3 hours**
Study of the basic algebraic concepts which are needed for greater proficiency in college algebra. For students who have scored 17 and below on ACT Math portion. Not applicable for General Education. *A, B, C, D, F, U grades are awarded. Students must repeat the course the succeeding semester if a "U" or "F" grade is awarded.* Offered Fall and Spring.

FLORIDA COMMUNITY COLLEGE OF JACKSONVILLE

MAT 0002 Basic Mathematics **4 cr.**
(College Preparatory Studies)
(This course does not apply toward the associate degree)
This course is designed for students who lack the basic skills necessary for success in MAT 0024, Elementary Algebra. It provides instruction and practice in computation involving whole numbers, fractions, decimals, percent and signed numbers. Students must attain a passing score on the exit test for satisfactory completion. Four contact hours.

MAT 0024 Elementary Algebra **4 cr.**
(College Preparatory Studies)
(This course does not apply toward the associate degree)
Prerequisite: MAT 0002 with a grade of "C" or better or a satisfactory score on placement test. This course is designed for students who have had little or no algebra. The major topics in this course are sets, real numbers and their properties, exponents and polynomials, linear equations, and linear inequalities, as well as an introduction to factoring, radicals and graphing. Students must attain a passing score on the exit test for satisfactory completion. Four contact hours.

GEORGIA MILITARY COLLEGE

(Institutional Credit)
DSM 095 Development Studies Mathematics I **5 quarter hours**
Review of basic skills of arithmetic: common and decimal fractions, computational skills, and ratio and proportion. Prerequisite: Placement by examination and recommendation of Developmental Studies Chairman.

(Institutional Credit)
DSM 097 Developmental Studies Mathematics II **5 quarter hours**
Introduction of elementary algebraic concepts: variables, polynomials, solutions to simple equations, and graphing. Prerequisites: DSM 095 or placement by examination and recommendation of Developmental Studies Chairman.

(Institutional Credit)
DSM 099 Developmental Studies Mathemat[illegible] III **5 quarter hours**
(Intermediate Algebra) Continuation of DSM [illegible] covering rational, radical, and quadratic equations and complex n[illegible]bers. Prerequisite: DSM 097 or placement by examination and recommendation of Developmental Studies Chairman.

LIMESTONE COLLEGE

090 Arithmetic
Arithmetic skills, problem solving techniques, ratio and percent, systems of measurement, calculators use, and a brief introduction to notation of basic algebra. The course is graded on a Satisfactory/ Unsatisfactory basis, and the credit hours do not count toward graduation. Credit, 3 hours.

091 Elementary Algebra
Signed numbers and a review of arithmetic, linear and quadratic equations, linear inequalities, exponents, polynomials, algebraic fractions, and an introduction to graphing. The course is graded on a Satisfactory/Unsatisfactory basis, and the hours do not count toward graduation. Credit, 3 hours.

095 Geometry
Concepts of basic geometry including terminology, congruence, parallel lines and planes, polygons, circles, measure, similarity, proof-writing and constructions. Intended for students who have not had high school geometry. The course is graded on a Satisfactory/ Unsatisfactory basis, and the hours do not count toward graduation.
Credit, 1 hour.

MISSISSIPPI GULF COAST COMMUNITY COLLEGE

MAT 1103—Developmental Mathematics This course is designed to develop the mathematical concepts and techniques for a program in general education. The basic concepts of arithmetic are presented. Generally this course will be taken by those students who need remediation in basic mathematics. Additional lab work is required. (3,3,0)

MAT 1213—College Mathematics (Beginning Algebra). In this course the basic ideas of elementary algebra are presented, such as number systems, solving equations, simplifying polynomials, factoring algebraic expressions, and simplifying rational expressions. Generally, this course will be taken by those students who have mastered the fundamentals of mathematics but have taken no algebra in high school. Additional lab work may be required. (3,3,0)

MOHEGAN COMMUNITY COLLEGE

MATH 076 Math Foundations **4 semester hours**

A course designed for students who lack basic mathematical and study skills. Some of the major areas covered include computations with whole numbers, fractions, decimals, percents, mathematics vocabulary, signed numbers, solutions of linear equations, interpretation and solution of word problems. This course is part of the Foundations Program taken concurrently with Reading and English Foundations. Since the math course is equal in time to two regular sections, it is intensive and should only be taken by those who can devote 16 class hours per week to the four courses. Generally, this course is open only to those recommended by placement testing. Others may enter by seeing the counselors or a member of the Foundations Team. (Course does not count towards the minimum requirements for graduation.)

MATH 078 Basic Math Skills **3 semester hours**

The course focuses on basic arithmetic and pre-algebra skills. Topics include: whole numbers, fractions, decimal numbers, proportions, percents, perimeter, area, volume, signed numbers, algebraic expressions and equations. (Course does not count towards the minimum requirements for graduation.)

MATH 080 Pre-Algebra **1 semester hour**

This five-week course is designed for students who have sound arithmetic skills but no background in algebra. The topics include: the use of variables, algebraic expressions, signed numbers, and equations. (Course does not count towards the minimum requirements for graduation.)

PARK COLLEGE

DV 104 **Introduction to Mathematical Skills** 3 cr.

An introduction to basic mathematics via a skills-competency approach. Topics include the number system, basic operations, fractions, decimals and percent. (This course is not available to students who have successfully completed a college level mathematics course or who have otherwise satisfied the prerequisites for MA 105 or MA 106). VA benefits might not be available for this course.

PENSACOLA JUNIOR COLLEGE

MAT 0002 College Prep Math. 5 hours, 3 credits (all).

This course is designed for students who have extreme deficiencies in the basic mathematical skills as determined by placement testing. The course is divided into 4 major units: whole numbers, fractions, decimal fractions, percents. Throughout the course emphasis is placed on the understanding and working of word problems.

MAT 0024 College Prep Algebra. 5 hours, 3 credits (all).

This course is designed for students who have extreme deficiencies in the basic algebraic skills as determined by placement testing. The course consists of covering symbols, numbers, and numerals; sets, open phrases and truth sets; postulates and properties; first degree equation; signed numbers, monomials; polynomials; inequalities; and word problems.

PHILLIPS JUNIOR COLLEGE of the MISSISSIPPI GULF COAST

MA0099 Developmental Mathematics

This course is designed to develop mathematical concepts and techniques for applicability in subsequent courses. The basic concepts of arithmetic are presented. Generally this course will be taken by those students who need remediation in basic mathematics and does not apply as credit towards degree requirements.

40 Hours ..... 2 Credit Hours

SHELBY STATE COMMUNITY COLLEGE

MATH 0700 4 Basic Mathematics
Basic mathematical topics of whole numbers, fractions, decimals, powers and roots, percents, systems of weights and measures, geometric measures, graphical interpretation, elementary statistical concepts, estimation and problem solving. Required of all students scoring below the designated level on the placement examination. 4 Hrs. Lecture

MATH 0800 4 Elementary Algebra
Fundamentals of elementary algebra: operations with integers, evaluation and simplication of expressions and formulas, solution of first-degree equations and inequalities, ratio and proportion, applied problems, operations on polynomials, factoring, rational expressions, exponents, roots, radicals and complex numbers. Prerequisite: Basic Mathematics or demonstrated proficiency on the placement examination. 4 Hrs. Lecture

MATH 0810 3 Intermediate Algebra
Absolute value equations and inequalities, quadratic equations and inequalities, graphing linear equations and inequalities, parabolas, 2x2 systems of linear equations, relations and functions, sequences and series, introduction to counting and probability. Prerequisite: MATH 0800 4 Elementary Algebra or demonstrated proficiency on the placement examination. 4 Hrs. Lecture

TIDEWATER COMMUNITY COLLEGE

MTH 02 Basic Arithmetic (4 cr.)

Covers arithmetical principles and computations. Develops the mathematical proficiency for selected curriculum entrance. Lecture 4 hours per week.

MTH 03 Basic Algebra I (5 cr.)

Develops mathematical proficiency necessary for selected curriculum entrance. Prerequisites satisfactory score on an appropriate proficiency examination and MTH 02 or equivalent. Lecture 5 hours per week.

MTH 04 Basic Algebra II (5 cr.)

Develops the mathematical proficiency in intermediate algebra necessary for selected curriculum entrance. Prerequisites satisfactory score on an appropriate proficiency examination and MTH 03 or equivalent. Lecture 5 hours per week.

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ANNE ARUNDEL COMMUNITY COLLEGE

ENG 001 (EM)
BASIC ENGLISH 1
(3 noncredit load hours)
Three hours weekly; one semester.

Students enroll in this course if their ACT, SAT or college placement test scores and high school records indicate they are seriously deficient in English.

A study of grammar and syntax of the English sentence, includes punctuation and common sentence patterns. Writing practice leading up to the paragraph.

Placement procedures may require students to register for RDG 011 in addition to ENG 001 and ENG 002. (See RDG 011 course description.)

ENG 002 (EM)
BASIC ENGLISH 2
(3 noncredit load hours)
Three hours weekly; one semester.

Students enroll in this course after passing ENG 001, or if their tests show a passable understanding of grammar.

The course consists of review of the grammar and syntax of the sentence; study of the paragraph, stressing unity and coherence; emphasis on topic sentence, controlling idea, major and minor support, and transitional techniques; substantial writing practice leading up to multiparagraph compositions; and analysis of sample paragraphs.

Placement procedures may require students to register for RDG 011 in addition to ENG 002. (See RDG 011 course description.)

Students must earn a grade of C or better in ENG 002 before proceeding to ENG 111.

ENG 003 (EM)
ACCELERATED BASIC ENGLISH
(5 noncredit load hours)
Five hours weekly; one semester.

A study of the English sentence, including punctuation and common sentence patterns; study of the paragraph, stressing unity and coherence; emphasis on topic sentence, controlling idea, major and minor support and transitional techniques; substantial writing practice, reinforced by periodic conferences with the instructor.

ENG 003 substitutes for both ENG 001 and ENG 002 for students whose admission requirements include these courses.

Placement procedures may require students to register for RDG 011 in addition to ENG 003. (See RDG 011 course description.)

CENTRAL TEXAS COLLEGE

DSSP 0300 Developmental Speech (1-2) Credit: 3
An introductory course emphasizing structure and different techniques of presentation, as well as principles and methods of discussion. Designed to identify deficiencies and strengths, and to develop and improve interpersonal skills and the student's ability to communicate through effective speech.

DSWR 0101 Basic Developmental Writing (1-1.5) Credit: 1
This course helps a student prepare to pursue college-level academic work. It uses varied instructional techniques to identify deficiencies and improve basic writing skills.

DSWR 0301 Developmental Writing I (1-2) Credit: 3
A study of basic composition skills. Designed for students who score below 50% on the Pre-TASP writing section. Emphasizes paragraph writing, with attention given to grammar problems as they occur in the context of the paragraphs. Intended for native English speakers or for those students who have made a score of 550 or more on the Test of English as a Foreign Language (TOEFL).

DSWR 0302 Developmental Writing II (1-2) Credit: 3
A study of basic composition skills. Designed for students who score from 50% through 69% on the Pre-TASP writing section. Emphasizes essay writing, with attention given to grammar problems as they occur in the context of the essays. Intended for native English speakers or for those students who have made a score of 550 or more on the Test of English as a Foreign Language (TOEFL).

CHAPMAN UNIVERSITY

Eng 99 Basic Writing Skills
A course that develops accuracy and clarity in writing. Conferences with the instructor and tutorials with peers provide maximum opportunities for individual development. (Offered every semester.) 3 credits.

CHICAGO CITY WIDE COLLEGE

English 001
Writing Essentials—Review of rules and intensive practice in phonics, spelling, vocabulary, grammar and punctuation. Three periods per week. *3 credit hours.*

English 098
Composition—Elements of reading, writing and speaking basic English. *Prerequisite:* Placement test and concurrent enrollment in Reading 099 or consent of department chairperson. Three periods per week. *3 credit hours.*

English 100
Basic Writing Skills (Formerly Composition)—Emphasis on individual expression in paragraph form, sentence clarity through knowledge of sentence structure, and correct word forms. *Prerequisite:* Placement test or C or better in English 098 or consent of department chairperson. Three periods per week. *3 credit hours.*

COLUMBIA COLLEGE

ENG 107 Developmental English Composition **3 hours**
Comprehensive review of basic English grammar and writing skills as preparation for ENG 111. *Grades A, B, C, D, F, or U awarded. Students must repeat the course the succeeding semester if a "U" or "F" grade is awarded.* Offered Fall and Spring.

FLORIDA COMMUNITY COLLEGE OF JACKSONVILLE

ENC 0001 Introduction to Composition A **4 cr.**
(College Preparatory Studies Course)
(This course does not apply toward the associate degree)
Prerequisite: MAPS Score of nine or below. This course is an introductory course in composition designed to help students gain greater proficiency in basic writing skills. The course assesses the level at which students are writing to discover individual areas of deficiency in writing skills and provides the necessary instruction to help them overcome these deficiencies. As a result of carefully planned learning experiences, the student should be able to write clear, adequately-developed, logically-organized, effective sentences which conform to the conventions of standard American English. Four contact hours; four lecture/discussion hours.

ENC 0011 Introduction to Composition B **4 cr.**
(College Preparatory Studies Course)
(This course does not apply toward the associate degree)
Prerequisite: ENC 0001 or MAPS Score of 10 or above. This course is an introductory course in composition designed to help students gain greater proficiency in basic writing skills. The course assesses the level at which students are writing to discover individual areas of deficiency in writing skills and provides the necessary instruction to help them overcome these deficiencies. As a result of carefully planned learning experiences, the student should be able to write clear, adequately-developed, logically-organized, effective paragraphs which conform to the conventions of standard American English. Four contact hours; four lecture/discussion hours.

GEORGIA MILITARY COLLEGE

(Institutional Credit)
DSE 097 Developmental Studies English I **5 quarter hours**
This course is primarily a comprehensive review of grammar and mechanics to prepare students for success in regular English courses. Paragraph writing is also included. Prerequisite: Placement by examination and recommendation of Developmental Studies Chairman.

(Institutional Credit)
DSE 099 Developmental Studies English II **5 quarter hours**
This course, an extension of DSE 097, emphasizes paragraph structure and the writing of short expository essays, with special attention to organization, logic, usage, tone, and style. The course is designed to prepare students for college-level writing in English 101 and in other disciplines. Prerequisite: DSE 097 or placement by examination and recommendation of Developmental Studies Chairman.

LIMESTONE COLLEGE

101 English Grammar and Composition
A course in the fundamentals of English grammar, usage, and mechanics, with some attention to organization. A student required to take English 101 must enroll in the course during his/her first semester on campus and must be continuously enrolled until the proficiency level is reached.

MISSISSIPPI GULF COAST COMMUNITY COLLEGE

ENG 1103—Developmental English. This course in writing stresses basic communication skills—writing sentences, paragraphs, outlines, summaries; reviewing grammar, usage, mechanics, and spelling; building vocabulary; and reading for ideas. Additional lab work may be required. (3,3,0)

MOHEGAN COMMUNITY COLLEGE

ENG 051 English Expression **3 semester hours**
Focuses on grammar and pronunciation for everyday use and the application of these skills in the writing and organization of sentences. This course should be taken in conjunction with READ 075: Effective Reading and is intended for non-native speakers of English. (Course does not count toward the minimum credit requirements for graduation.)

ENG 075 Writing Workshop **3 semester hours**
This course teaches basic writing skills, such as the topic sentence,methods of paragraph development, summarizing information, writing essay tests, grammar, usage, vocabulary, and spelling. The class format is a workshop where students write, read, and revise their ideas. This course is recommended as background for students whose skills are below the level needed for success in English 111. Accordingly, it can be taken by students who have completed English Foundations and still need practice. It can also be taken by students who have passed English 111 with a C or less. (Course does not count towards the minimum credit requirements for graduation.) Placement test is required prior to registration.

ENG 076 English Foundations **4 semester hours**
English Foundations provides instruction in basic writing skills and prepares the student for further study of English composition. Emphasis is placed on mastery of the basic principles of grammar, punctuation, sentence structure, paragraph organization, and essay writing. This course is part of the Foundations Program taken concurrently with Math and Reading Foundations. Since the English course is equal in time to two regular sections, it is intensive and should only be taken by those who can devote 16 class hours per week to the four courses. Generally, this course is open only to those recommended by placement testing. Others may enter by seeing the counselors or a member of the Foundations Team. (Course does not count towards the minimum requirements for graduation.)

PARK COLLEGE

DV 103 **Effective Writing Skills** 3 cr.
This course is intended to help students improve their skills in writing correct sentences, paragraphs, and short essays. Other concerns of the course are vocabulary building, correct usage and improvement of writing skills. (This course is not available to students who have successfully completed a college level writing course or who have otherwise satisfied the prerequisites for EN 101). VA benefits might not be available for this course.

PENSACOLA JUNIOR COLLEGE

ENC 0001 College Prep English. 5 hours. 3 credits
This course is designed for students who have deficiencies in the basic language skills. It offers a review of grammar rules, language usage, sentence structure, effective paragraph composition, spelling and punctuation.

ENC 0002 College Preparation/Writing.
This course is designed to offer the rudiments of writing and reasoning required in developing proper sentence structure, paragraphs, and themes. This course will assess the student's writing ability and assist the student in developing skills that have not been acquired in the area of writing.

PHILLIPS JUNIOR COLLEGE of the MISSISSIPPI GULF COAST

EN0099 **Developmental English**
This course stresses writing and basic communications skills required for applicability in subsequent courses—writing sentences, paragraphs, outlines, summaries; reviewing grammar, usage, mechanics, and spelling; building vocabulary; and reading for ideas. Generally this course will be taken by those students who need remediation in English and does not apply as credit towards degree requirements.
40 Hours ..... 2 Credit Hours

SHELBY STATE COMMUNITY COLLEGE

ENGL 0700 3 Basic Writing I
English for the mastery of grammar and paragraph writing. The course is designed for students who may be deficient in formal language skills. Laboratory, classroom, and individualized work.

ENGL 0710 3 Basic Writing II
English for the mastery of grammar and composing skills. Topics include major grammatical errors, organization and development of the paragraph, and use of Standard American English. Laboratory, classroom, and individualized work. Prerequisite: ENGL 0700 3 Basic Writing I or satisfactory performance on placement test.

ENGL 0800 3 Developmental Writing
English for mastery of theme and report writing. Topics to include unity, organization, and development of themes, grammar and mechanics, and documentation. Prerequisite: ENGL 0710 3 Basic Writing II or satisfactory performance on the placement test. 3 Hrs. Lecture

TIDEWATER COMMUNITY COLLEGE

ENG 01 Preparing for College Writing I (1-6 cr.)

Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into their respective curricula. Guides students through the process of starting, composing, revising, and editing. Variable hours per week.

ENG 03 Preparing for College Writing II (1-6 cr.)

Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Variable hours per week.

ANNE ARUNDEL COMMUNITY COLLEGE

CSI 110 (EM)
COMPUTER LITERACY
(3 semester hours)
Two hours of lecture and two hours of laboratory weekly; one semester.

For non-computer majors who wish to use the computer for personal and educational applications. Through lecture and hands-on microcomputer activities, the students will learn the fundamentals of computer operations. Students spend approximately one-half of class time in a hands-on experience in the PC (personal computer) environment using word processing, spreadsheets and database packages. Students also will explore factors involved in selecting a microcomputer system. Credit will not be given for both CSI 110 and CSI 113. Lab fee $20.

CENTRAL TEXAS COLLEGE

COSC 1300 Computer Information Processing (3-0) Credit: 3
An up-to-date survey of computer hardware and software systems and developments that will provide the basis for further advancements in information processing. Provides a comprehensive overview of the computer; what it is; what it can and cannot do; how it operates; and how it may be instructed to solve problems. Covers terminology and examines the application of a broad range of organizational settings and social environments. An overview of BASIC programming is provided. Prepares non-computer majors to understand and utilize computers in both their personal and professional lives.

CHAPMAN UNIVERSITY

CompSci 200 Introduction to Computers and Data Processing G
No prerequisites. This course will explore computers as a tool, as a device, and as an influence on our society. The student will be given experience in programming and operating computers. The functions of computers and their ancillary equipment will be explained and demonstrated. The use, misuse, and abuse of computers will be discussed with examples from many fields. Lab fee: $15-$25. (Offered every semester.) 3 credits.

CHICAGO CITY WIDE COLLEGE

No course in this category.

COLUMBIA COLLEGE

CIS 110 Computer Literacy
A non-technical overview of computers in a modern technological society. Class discussion emphasizes the evolution of computers, basic hardware and software concepts and terminology, the applications of computers, the advantages and disadvantages, social and ethical problems, and the future of computers in society. Hands-on use of the microcomputer is an integral part of this course. Lab Fee Required. Offered Fall and Spring. G.E.

FLORIDA COMMUNITY COLLEGE OF JACKSONVILLE

CGS 1060 Introductory Computer Concepts (Y) 3 cr.
This course, intended for individuals with no previous computing experience, includes the history of computers, a survey of how computers are used today, the basic components of computers and computer terminology, elementary problem solving using a high-level computer language and laboratory experiences using applications software. A study of information systems and computer careers completes the course. Additional lab time may be required in order to complete applications assignments. Four contact hours: three lecture hours; one laboratory hour.

GEORGIA MILITARY COLLEGE

CET 110 Introduction to Microcomputers 5 quarter hours
Course is a study of digital language and concepts used in all phases of digital electronics. A detailed study is made of binary numbers.

LIMESTONE COLLEGE

101 Introduction to Computing
An introductory course for both computer-and non-majors, and both business and scientific users. Topics include components of computer systems, data entry equipment and methods, central processing unit, mass storage and database systems, information retrieval and output, and data communications. In addition, this course also emphasizes the programming techniques using BASIC language, including language syntax, input /output, control statements, looping, functions, and arrays. Credit, 3 hours.

MISSISSIPPI GULF COAST COMMUNITY COLLEGE

CSC 1113—**Introduction to Computer Concepts**. This basic course advances concepts, terminology, and theory of modern computers and provides a background in programming languages. (3,3,0)

MOHEGAN COMMUNITY COLLEGE

EDP 101 **Introduction to Electronic Data Processing I** **3 semester hours**

Introduction to electronic data processing concepts and practice. Topics include: terminology, historical background, social impacts, varieties of computers, computer equipment and software, database management. Hands-on practice using PC/MS-DOS and Macintosh menus. Extensive hands-on practice using two popular word processors.

PARK COLLEGE

CS 145 Concepts of Computers 3 cr.
The student will be introduced to the basic concepts and terminology used in computer hardware, software, and system development. The student will develop an understanding of the influence the computer is having upon society.

PENSACOLA JUNIOR COLLEGE

CGS 1000 Introduction to Computers. 3 hours. 3 c.c. (all)
This course will cover computer concepts, computer applications, productivity software (word processing, spreadsheet, data base, and graphics.) Course requires use of computers outside of class time.

PHILLIPS JUNIOR COLLEGE of the MISSISSIPPI GULF COAST

DP0101 Introduction to Data Processing
This is designed as an introduction course to computers course. It will include a review of the information processing cycle and an overview of the latest developments and uses of both hardware and software. Current trends, issues and careers in the computer professions will be covered. The student will practice hands-on training and become knowledgeable of, and proficient in the basic Disk Operating System (DOS) commands necessary to perform basic computer operations such as: formatting disks, copying and deleting files, changing default drives, making, changing, and removing directories, file creations, rules/ limitations, etc.
20 Lecture Hours/20 Lab Hours ..... 3 Credit Hours

SHELBY STATE COMMUNITY COLLEGE

COMP 1010 3 Computer Literacy
First course in computer science. Introduction to uses, history, ethics, hardware, software, languages and programming. Prerequisite: MATH 0700 4 Basic Mathematics or demonstrated proficiency on the Placement Examination. Students who have received credit for COMP 1010 3 Computer Literacy cannot receive credit for CMPT 1010 3 Computers in Business. 3 Hrs. Lecture

TIDEWATER COMMUNITY COLLEGE

CIS 150 Introduction to Microcomputer Software **(4 cr.)**
Provides a working introduction to microcomputer software, fundamentals, and applications. Includes operating systems word processing, spreadsheet and database software. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Appendix C

Basic Skills Education Programs in the Military — 1980-1981

DoD Pre-enlistment Programs	Recruit Training Programs	Job Technical School Programs	Unit/Duty Station Programs
	ARMY		
ABE Job Corps ESL	Basic Skills Education Program (BSEP I)	BSEP II BSEP I	BSEP II BSEP I ASEP Off Duty HSC
	AIR FORCE		
	BMT Reading Proficiency Program	STEP ASP PLATO-SIP MSIP TT-IDEA	IDEA Off Duty HSC
	NAVY		
	Academic Remedial Training	JOBS	FST BEST Off Duty HSC
	MARINE CORPS		
	None	None	BSEP Off Duty HSC

Acronyms: DoD: ABE-Adult Basic Education; ESL-English as a Second Language; Army: BSEP-Basic Skills Education Program; ASEP-Advanced Skills Education Program; Air Force: BMT-Basic Military Training; STEP-Skill Training Enhancement Program; ASP-Academic Skills Program; PLATO-SIP-PLATO Skills Improvement Programs; MSIP-Math Skills Improvement Programs; TT-IDEA-Technical Training; Individualized Development and Educational Advancement Program; IDEA-Duty Station IDEA; Navy: JOBS-Job-Oriented Basic Skills FST-Functional Skills Training; BEST-Behavioral Skills Training; Marine Corps — BSEP-Basic Skills Education Program.

Source: Sticht(1982), p.32.

Basic Skills Education in the Military: Program Descriptions

Service/ Program 1	Contract In-House 2	Length of Program 3	Basic Skills Addressed 4	Orientation 5	Instructional Mode 6	Materials Used 7	Stand-ardized 8
· FORCE							
·ecy	In-house	Corrective: Mean: 7 training sessions of 2 hours Remedial: Mean: 7.7 training days	Corrective: Decoding Remedial: reading, motivation, and time management	General	Self-paced	Remedial: Science Research Associates Materials	Yes
	In-house	10 days	Listening, visual interpretation, reasoning, study skills, adult responsibility			AV presentations; work books	N/A
	In-house	Variable (Mean: 5 4 hour sessions)	Study skills, testmanship, memory, vocabulary, attitude	Military Job-oriented	Flexible entry/exit	AF owned materials, actual job materials	N/A
·O	N/A	Maximum: 33 hours Mean: 18-20 hours	Reading, math	General	CBI	PLATO programs	Yes
	In-house	Lowry: Mean 3 days	Math	Mixed	Self-paced with individual instruction		No
·EA	Contract		English grammar, reading, math	General	Self-study		No
	Contract	Up to 10 hours per week	Reading, math	General			No
AY							
	Contract	Literacy: Reading: 120 hours in 6 weeks. Math: 60 hours in 6 weeks. ESL: 6 weeks	Literacy: Reading, writing, listening and oral communication, arithmetic. ESL: Emphasis (or focus) on speaking and listening	Job-oriented		Lit: Soldiers manuals, DA pamphlets, regulations. ESL: American Language Course (ALC)	No
	Contract	Lit: Up to 360 hours	Reading, computational writing, speaking and listening	Job-oriented		Lit: Contractor developed materials. ESL: ALC	No
	Contract			Job-oriented		Developed by contractor to encompass tasks in Soldier's Manuals.	No
·INES							
	Contract	100-234 hrs. varies	English, math, reading, ESL	General	Varies	Commercial	No
/Y							
	Contract/ In-house	105-175 hours	Decoding, vocabulary, comprehension, reading rate, study skills	Mixed	Modules prescribed on basis of diagnostic test. Mix of lockstep and individual	Mixture of Navy and Commercial	Yes
	In-house	30 days	Military skills, individual growth, responsible living, counseling	Military life coping	Mixture of lockstep and individual	Includes some Blue Jacket manual	Yes
	Contract	45 hours	One of the basic skills	General			No
	Contract		Reading, listening, comprehending, study skills, math	Job-oriented	Lock-step: 4 job-oriented strands each	Each strand uses appropriate text manuals and materials	Yes

Source: Sticht (1982), p.36.

BEST COPY AVAILABLE

Appendix D

American Preparatory Institute

Programs, Contracts, Services, and Materials

August 1992

Programs:

ABE	Adult Basic Education
BASP	Basic Academic Skills Program (Civilian)
BSEP	Basic Skills Education Program (U.S. Military)
BSEP II	Basic Skills Education Program II (U.S. Military)
CALCI	Computer–Assisted Learning Center Instruction
CBI	Computer Based Instruction
CSEP	Career Skills/Soldiers Education Program
ESL	English as a Second Language
ESP	Essential Skills Program
GED	General Educational Development
HSCP	High School Completion Program
HSDP	High School Diploma Program
LRC	Learning Resource Center
LS	Life Skills
NCBSP	Navy Campus Basic Skills Program
PGED	Pre-General Educational Development

Services:

Training—
- Preservice & Inservice

Program Support—
- Planning & Development
- Management/Co–Management
- Monitoring & Evaluation

Proposal—
- Preparation & Review

Satellite Schools—
- Operation
- Management
- Accreditation
- Quality Control

Special Purpose Schools—
- Operation
- Management
- Quality Control
- Accreditation

Site	State/Country	Program
Civilian		
Administrative School District, Special Program	Oregon	High School Curriculum
Adult High School, API, Central Campus, Killeen	Texas	Preservice Training, BASP, HSDP, GED Prep, College Prep
Alamo Private Industry Council	Texas	BASP Curriculum Approved for SDA's
Ballinger School District	Texas	Preservice Training, High School Curriculum
Birdville School District	Texas	Preservice Training, High School Curriculum
Brady School District	Texas	High School Curriculum
Brownsville School District, STARS Program	Texas	Preservice Training, BASP & HSDP Curriculum
Brownsville School District, Migrant Program	Texas	Preservice Training, High School Curriculum
Buena High School, Alternative School	Arizona	Preservice Training, High School Curriculum
Central Texas College, Service Area JTPA	Texas	Adult Basic Academic Skills
Central Texas Private Industry Council	Texas	BASP Curriculum Approved for SDA's
Chapel Hill (Tyler) School District	Texas	BASP Curriculum
Clear Fork Cooperative Alternative School Anson, Aspermont, Hamlin, Haskell, Hawley, Merkel, Rovy, Stamford, and Trent School Districts	Texas	Preservice Training, High School Curriculum
Cleburne School District, Alternative School	Texas	Preservice Training, High School Curriculum
Coleman School District	Texas	Preservice Training, High School Curriculum
Comanche School District	Texas	Preservice Training, High School Curriculum
Communities in Schools, Youth Programs in San Antonio Area	Texas	Preservice Training, BASP Curriculum
Cooperative Alternative Program Bangs, Ballanger, Coleman, Novice, Panther Creek, Santa Anna, and Winters School Districts	Texas	Preservice Training, High School Curriculum
Crook County School District, Alternative School	Oregon	Preservice Training, High School Curriculum
Crowley School District	Texas	Preservice Training, High School Curriculum
Dallas JTPA, New Beginning Learning Center	Texas	Preservice Training, High School Curriculum
Dallas Private Industry Council	Texas	BASP Curriculum Approved for SDA's
Eagle Pass School District	Texas	Preservice Training, BASP & HSDP Curriculum
Edgewood School District, Hispanic Mentorship Program	Texas	Preservice Training, High School Curriculum
Fort Worth JTPA, New Beginning Learning Center	Texas	Preservice Training, High School Curriculum

Site	State/Country	Program
Civilian (Continued)		
Fort Worth Consortium Private Industry Council	Texas	BASP Curriculum Approved for SDA's
Fredericksburg School District	Texas	Preservice Training, High School Curriculum
Graham School District	Texas	Preservice Training, High School Curriculum
Grand Prarie School District	Texas	Preservice Training, High School Curriculum
Grapevine-Colleyville School District	Texas	Preservice Training, High School Curriculum
Harlingen School District, KEYS Academy	Texas	High School Curriculum
Hobbs Cooperative Alternative School Blackwell, Colorado City, Hermleigh, Hobbs, Ira, Loraine, Roscoe, Rotan, Snyder, and Sweetwater School Districts	Texas	Preservice Training, High School Curriculum
Hurst–Euless–Bedford School District, KEYS Learning Center	Texas	Preservice Training, High School Curriculum
Johnson County Learning Center of Cleburne	Texas	Preservice Training, High School Curriculum
Kings County School District, Kings Government Center	California	High School Curriculum
Lamar Consolidated School District	Texas	Preservice Training, High School Curriculum
Manor School District, Alternative School	Texas	Preservice Training, High School Curriculum
Mansfield School District	Texas	Preservice Training, High School Curriculum
McKinney Job Corps Center	Texas	Special Purpose School, High School Diploma
McKinney School District, Alternative School	Texas	Preservice Training, High School Curriculum
North East School District	Texas	Preservice Training, High School Curriculum
Raymondville School District	Texas	Preservice Training, High School Curriculum
Redmond School District, Alternative School	Oregon	Preservice Training, High School Curriculum
San Felipe–Del Rio Consolidated School District	Texas	Preservice Training, High School Curriculum
Sherman School District	Texas	High School Curriculum
Temple School District, Project ABLE	Texas	High School Curriculum
Texas Department of Commerce	Texas	BASP Curriculum Approved
Texas Youth Commission Brownwood, Corsicana, Crockett, Evins (Edinburg) Gainesville, Giddings, & West Texas (Pyote) State Schools	Texas	Preservice Training, BASP & HSDP Curriculum
Wackenhut Corrections Prerelease Facility—Bridgeport	Texas	Special Purpose School: ABE, ESL, PGED, GED, LS
Wackenhut Corrections New Visions Chemical Dependency Treatment Center—Kyle	Texas	Special Purpose School: ABE, ESL, PGED, GED, LS
Weatherford School District	Texas	High School Curriculum
Wilmer–Hutchins School District, Alternative High School Program	Texas	Pre/Inservice Training, High School Curriculum
United States Government		
LBJ Job Corps Civilian Conservation Center	N. Carolina	BASP, GED, Drivers Ed.
United States Army		
Ft Hood — CTC Skills Center	Texas	HSDP
Ft Knox	Kentucky	BSEP, CBI
Ft's Kobbe, Davis, and Clayton	Panama	HSDP, BSEP, ESL, LRC
Ft Lee	Virginia	BSEP I & II
Ft Leonard Wood	Missouri	BSEP I & II
Ft Lewis and Yakima Firing Center	Washington	BSEP, ESL, HSDP, CALCI
Ft Polk	Louisiana	BSEP
Ft Stewart and Hunter Army Air Field	Georgia	BSEP
Walter Reed Army Hospital	Maryland	BSEP, ESP, HSCP

American Preparatory Institute, P.O. Box 1800, Killeen, Texas 76540–9990 1-800-792-3348 EXT. 1315

Eighth United States Army	Korea	BSEP
United States Pacific Command		
USA, USAF, USMC, USN	Korea, Japan, Okinawa, Guam, & Diego Garcia	BSEP, HSDP
United States Navy		
Atlantic Fleet Afloat	Atlantic Ocean	NCBSP, HSDP
Atlantic Ashore	Virginia	NCBSP
Norfolk Ashore	Virginia	HSDP
Pacific Fleet Afloat	Pacific Ocean	NCBSP, HSDP
Pacific Ashore	California	NCBSP
Pacific Far East	Japan, Guam, Okinawa, & Diego Garcia	NCBSP, HSDP

Appendix E

SOCNAVPREP: A College Preparatory Program

1992

COURSE OFFERINGS AND REGISTRATION

Course offerings and registration schedules are published in advance of each semester by the College. Get a copy of the Class Schedule. Course offerings, class registration services, as well as counseling are offered on campus and on the Navy bases.

ADMISSION AND TESTING

Apply for admission and testing at the same time on campus or at Navy bases. Return for counseling after testing to determine course requirements.

THE COLLEGE

Tidewater Community College is a non-residential institution founded in 1968. It is one of several multi-campus institutions in the state-supported Virginia Community College System, serving a district of over a thousand square miles. Tidewater Community College presently is composed of the District Office and three permanent campuses. Classes are taught at several off-campus locations, on military installations, and in the community.

ACCREDITATION

Tidewater Community College, is a member of the Virginia Community College System, is approved by the State Board for Community Colleges and by the Virginia Community College System. The College is accredited by the Southern Association of Colleges and Schools.

The College is an institutional member of the American Association of Community and Junior Colleges and the Association of Virginia Colleges. It has been approved by the State Board of Education for benefits administered by the Veteran's Administration and by the U.S. Office of Education for various federally-funded programs.

TIDEWATER COMMUNITY COLLEGE IS A SOC SCHOOL

Servicemembers Opportunity Colleges
Degree and Certificate/Diploma Programs for the NAVY
1-800-368-5622

TO REQUEST INFORMATION FROM THE COLLEGE

Call:
James V. McGowan
(804) 427-7133
or
Diane Armstrong
(804) 427-7110

Write:
Tidewater Community College
Virginia Beach Campus
Admissions Office-SOCNAV/SOCAD
1700 College Crescent
Virginia Beach, VA 23456

SOCNAVPREP

A College Preparatory Program

IF YOU'RE NOT QUITE READY FOR COLLEGE!

A SOCNAVPREP CERTIFICATE MAY BE THE ANSWER

TIDEWATER COMMUNITY COLLEGE

YOU'D LIKE TO GET A COLLEGE DEGREE BUT YOU....

- Didn't take the college track in high school . . .
- Are rusty . . .
  Haven't been to school in years . . .
- Feel you don't have time . . .
- *(Fill in your own excuse!)* . . .

WHATEVER YOUR EXCUSE

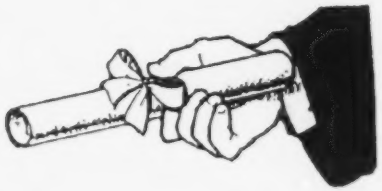
SOCNAVPREP

IS FOR YOU!

REVIEW!

BRUSH UP!

IMPROVE YOUR SKILL LEVEL!



ENROLL IN SOCNAVPREP

DURING YOUR OFF-DUTY HOURS AND USING TUITION ASSISTANCE YOU CAN GET A LEG UP ON YOUR GOAL OF A COLLEGE DEGREE

CONTACT
Navy Campus on nearest Naval Base
or SOCNAV Office on Campus
Tidewater Community College

4 AREAS OF STUDY

Reading Improvement and Study Skills

Writing Development

Mathematics

Introduction to Computer Information and Application*

* This course carries degree applicable credit.

Appendix F

Central Texas College

DEVELOPMENTAL STUDIES
COURSE DESCRIPTIONS

DSED 0300 College Study Skills Credit: 3

Designed for improvement of study systems. Emphasis is placed on high level study skills and the improvement of time management, effective listening and note-taking, marking tests, learning through media, concentration, retention of information, and taking examinations.

DSLA 0300,0301 English for International Students I and II Credit: 3

Speaking and writing for students whose native language is not English. Intended to aid foreign students in attaining greater facility in the use of the English language.

DSLA 0310 Reading and Vocabulary I Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores below 400. The primary objectives are to develop reading fluency, increase vocabulary, and to prepare the students to function in an academic environment.

DSLA 0314 Writing I Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores below 400 and students with limited English proficiency. The objective is to develop writing skills, including organization of ideas and application of grammar necessary to form well-developed sentences and paragraphs.

DSLA 0315 Grammar I Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores below 400. The objective of the intermediate-level grammar course is to develop standard English usage with emphasis on well-developed sentences.

DSLA 0316 Listening Comprehension I Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores below 400. The primary objectives are to develop aural comprehension of specific conversational patterns in the areas of surface, implied, and inferred meaning.

DSLA 0317 Speaking I Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores below 400. The primary objectives are to move students from recognition of language to oral production. The emphasis is on pronunciation and dialog.

DSLA 0320 Reading and Vocabulary II Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores above 400. The objectives are to develop reading fluency and build vocabulary and prepare students to function in an academic environment. This course includes various techniques for becoming a better student in English.

DSLA 0321 Writing II Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores above 400. The objectives are to develop writing skills, standard English usage, organization of ideas and application of grammar.

DSLA 0322 Academic Listening and Speaking II Credit: 3

This course is designed for speakers of languages other than English with TOEFL scores above 400. The objectives are to develop beginning note-taking and speaking skills which will prepare students to funtion in an academic environment.

DSLA 0332 Academic Listening and Speaking III Credit: 3

This course is designed for entering freshmen. The primary objectives are to improve note-taking and oral reporting abilities which will prepare students for college-level course work.

DSMA 0300 Developmental Mathematics I Credit: 3

This developmental course includes adding, subtracting, multiplying, and dividing fractions, decimals, and integers, order of operations, percent, line graphs, bar graphs, pie graphs, pictographs, areas of plane, figures, exponents, and an introduction to signed numbers and algebra. A computer laboratory is required.

DSMA 0301 Developmental Mathematics II Credit: 3

Designed for students who need a review of fundamental algebraic operations. Topics include operations on real numbers, polynomials, linear equations, linear inequalities, factoring, graphing, and selected stated problems. A computer laboratory is required.

Appendix G

Fayetteville Technical Community College

DEVELOPMENTAL STUDIES T-099

The Developmental Studies program is designed as a "bridge" between high school and vocational/technical education. Courses are given to students to help them become able to enter the curriculum of their choice. People usually take Developmental Studies for one of the following reasons:

1. They did not complete the math and/or science courses in high school which they need to get into their chosen program.
2. They want to become better in certain specific subjects.
3. They want a good general review before enrolling in their chosen curriculum.

Whatever the reason, Developmental Studies will "bridge the gap" between high school and vocational/technical school.

Developmental courses in English and reading, math, science, social studies, and personal growth and development are offered to students based on the needs of the individual student. Special interest courses are also offered as elective exploratory courses. A placement test measuring achievement in reading, writing and math skills is used to determine the needed level of course work. Counselors work with students to help them plan the number and level of courses needed to be successful in their chosen program.

Admission to the regular vocational/technical programs will be based on how well the student does in the Developmental Studies courses. So, it is the student's opportunity and responsibility to do his/her best work in Developmental Studies.

Developmental Studies at FTCC is more than "prep" or "make-up" courses; this program also cares for the student as a person. Opportunities for personal growth and development are offered in classroom courses and in the support services available to the Developmental Studies student. Career/life planning, personal guidance and counseling, health services, and many other "extras" help the student to succeed in the classroom. Developmental Studies at FTCC cares for the whole person.

LEVEL I

FIRST QUARTER

ENG 94	Prescriptive Reading	3	2	0	4
ENG 80	Applied Reading Skills	3	2	0	4
MAT 91	Basic Math I	3	2	0	4
	Level I Science/Elective	3	2	0	4
		12	8	0	16

SECOND QUARTER

ENG 95	Vocabulary and Reading I	3	2	0	4
ENG 97	Grammar and Composition	3	2	0	4
MAT 92	Basic Math II	3	2	0	4
	Level I Science/Elective	3	2	0	4
		12	8	0	16

THIRD QUARTER

ENG 96	Vocabulary and Reading II	3	2	0	4
ENG 98	Composition	3	2	0	4
MAT 93	Basic Math II	3	2	0	4
	Level I Science/Elective	3	2	0	4
		12	8	0	16

DEVELOPMENTAL STUDIES *(continued)*

LEVEL II

FIRST QUARTER

ENG 94	Prescriptive Reading	3	2	0	4
ENG 80	Applied Reading Skills	3	2	0	4
MAT 95	Algebra I	3	2	0	4
	Level II Science/Elective	3	2	0	4
		12	8	0	16

SECOND QUARTER

ENG 95	Vocabulary	3	2	0	4
ENG 97	Grammar and Composition	3	2	0	4
MAT 96	Algebra II	3	2	0	4
	Level II Science/Elective	3	2	0	4
		12	8	0	16

THIRD QUARTER

ENG 96	Vocabulary and Reading I	3	2	0	4
ENG 98	Composition	3	2	0	4
MAT 97	Algebra III, Trigonometry	3	2	0	4
	Level II Science/Elective	3	2	0	4
		12	8	0	16

Source: FTCC Catalog 1990-1992, pp. 72-73

Appendix H

US Air Force Academy Preparatory School

Course Descriptions

Descriptions of the courses offered during the academic year are listed by department.

Courses are numbered to provide quick information about the level and sequence of the course. The first digit is the level, with a "4" indicating Advanced, "3" indicating Intermediate, and "2" indicating the Regular (or Basic) Track.

The second digit is the course designator. In English, "1" designates a Reading and Vocabulary course, "2" is a Grammar-Syntax course, and "3" is a rhetoric course.

The third digit usually indicates the sequence or difficulty of the course, except in Math, where a "9" in this position designates a combined course (in effect, most difficult).

ENGLISH

Eng 321. Fundamentals of Writing. This course is designed to help students make their sentences both grammatically correct and rhetorically effective. We will discuss the relationships and proper grammatical use of words, phrases, clauses, and punctuation. The concepts of pronoun reference and case, subject-verb agreement and parallel construction will also be covered. Students will discuss and practice the steps of writing effective paragraphs, from prewriting techniques through topic sentences to such essential elements as support and coherence.

Eng 331/431. Intermediate/Advanced Essays I. Throughout these courses students will build upon the paragraph-writing skills taught last term by learning the proper form of a five-paragraph essay. Also, they will get an in-depth orientation to expository forms of writing. Advanced students will have additional and more complicated readings and writings, assuring that each student is fully challenged.

Eng 332/432. Intermediate/Advanced Essays II. In these courses students will continue to build upon and refine their essay-writing skills. They will also broaden their thinking as they write about ideas inspired by reading various selections of poetry and literature. Advanced students will be expected to read and write more complicated material.

Source: U.S. Air Force Academy Preparatory School Curriculum Handbook 1991-92, pp. B-1 through B-6

Eng 333/433. Intermediate/Advanced Strategies. In this course block, students will learn how to write and analyze selected essays using the rhetorical devices of Comparison and Contrast, Inductive and Deductive Reasoning, Conviction and Motivation, Satire, Indirectness, Refuting the Opposition, and Emphasizing Facts. Advanced students will be assigned additional readings and writings to assure each student is fully challenged.

Eng 334/434. Intermediate/Advanced Research. This course combines paragraph and essay skills learned during the fall terms with strategies and skills learned in the previous term. Preparation and presentation of an entire research paper is the focus of this course and completes our introduction to lengthy, analytical writing skills development. Advanced students will have additional readings/writings assuring that each student is fully challenged.

Eng 335/435. Intermediate/Advanced Analysis. In this final rhetoric course, students will read selections of poems, essays, and short stories while offering a critique of each interaction. Numerous writing and editing takes place. A novel with a military theme is also studied to point out all of the rhetorical devices which students have been exposed to during the academic year. Moreover, this novel serves to ready them for the military training of the Academy.

MATHEMATICS DEPARTMENT

Math 211. Mathematics. This course will review computational skills involving whole numbers, decimals and fractions and mathematical problems involving percent. The properties of real numbers, exponents, polynomials, and factoring will be introduced. The course equates to a high school review of algebra.

Math 231. Geometry I. This course is an initial introduction and development of geometrical concepts to include definitions, logic concepts, and the means of solving geometric problems by algebraic methods. The main principles and definitions and how to apply the results to the solution of geometric problems

are presented. Topics include lines, angles and triangles; methods of proof; congruency; parallel lines, distances and angle sums; parallelograms, trapezoids, medians, midpoints, and circle relationships. The course equates to a review of the first half of a high school geometry course.

Math 232. Geometry II. This course provides further application of the algebraic approach to solving geometric problems. Use of algebra is emphasized as the major means of solving problems in area, similarity, proportions, surface area and volumes. Specific topics include ratios, proportions, areas, and the extension of plane geometry into solid geometry. The course equates to a review of the second half of a high school geometry course.

Math 339. Geometry I-II. This course covers material of both Geometry I and Geometry II at an accelerated pace. (See course descriptions for Geometry I and Geometry II.) The course equates to a high school review of geometry.

Math 341, 241. Trigonometry I. This course makes extensive use of the unit circle and triangle to build the foundations of basic trigonometric functions and identities. With this basic foundation the student is then able to show proficiency and knowledge in algebraic and trigonometric functions of angles or rotations. This course also covers graphing all types of trigonometric functions. The course equates to one and one-half semester hours of college trigonometry.

Math 342, 242. Trigonometry II. This course further expands on the basic principles of Trigonometry I. More trigonometric identities, inverse functions, and equations are introduced. After the basic foundation for the trigonometric functions and identities have been completely taught, application problems are introduced to further show the correlation between the basic principles of Trigonometry I and a realistic approach to solving applied problems. The course equates to one and one-half semester hours of college trigonometry.

Math 449. Trigonometry I-II. This advanced-track course covers the material of both Trigonometry I and Trigonometry II. (See course descriptions for Trig I and Trig II.) The course equates to three hours of college trigonometry.

Course Descriptions

Math 429. Algebra III-IV. This advanced-track course covers the material of both Algebra III starting with division of polynomials and Algebra IV at an accelerated pace. (See course descriptions for Algebra III and Algebra IV.) The course equates to two and one-quarter semesters hours of college algebra.

Math 324, 224. Algebra IV. This course covers inverses of relations and functions, exponential and logarithmic functions, properties of logarithmic functions, finding logarithmic function values on a calculator, graphs, base e and applications, applications of exponential and logarithmic functions in base 10 and base e, sequences, series, and arithmetic and geometric sequences and series. The course equates to one and one-half hours of college algebra.

Math 425, 325, 225. Algebra V. This course covers systems of equations in two, three or more variables, parabolas, ellipses, circles, hyperbolas, systems of first-degree and second-degree equations, matrices and systems of equations, determinants and Cramer's rule, operations on matrices, determinants of higher orders, properties of determinants, and inverses of matrices. The course equates to one and one-half hours of college algebra.

Math 261. Calculus I A. This is an introduction to differential calculus. The course consists of an introduction to limits, properties of limits, continuity and one-sided limits, infinite limits, theoretical and geometric interpretations of the derivative, velocity, and acceleration, differentiation rules, the Chain Rule, implicit differentiation, and related rates. The course equates to one and one-half semester hours of college calculus.

Math 461, 361. Calculus I A/B. This is the study of differential calculus with an introduction to integral calculus. The topics are limits, properties of limits, evaluating limits, continuity, infinite limits, theoretical and geometrical interpretation of the derivative, velocity and acceleration, differentiation rules, the Chain Rule, implicit differentiation, related rates, extrema, the Mean Value Theorem, Rolle's Theorem, increasing and decreasing functions, the First Derivative Test, concavity and the Second Derivative Test, limits at infinity, curve sketching, optimization problems, Newton's Method, differentials, antiderivatives and indefinite integration, and integration by substitution. The course equates to three hours of college calculus.

Math 462. Calculus II A/B. This advanced-track course is the completion of integral calculus. The course topics include sigma notation and the limit of a sequence, area, Riemann sums and the definite integral, the Fundamental Theorem of Calculus, variable bounds of integration and the natural logarithmic function, derivatives and integrals of the natural log, inverse

Math 451, 351, 251. Math Applications I. This course allows students to combine and apply the concepts learned in previous courses of algebra, geometry, and trigonometry. It is an introduction to static problems in classical physics and mechanics (without calculus). Topics include vectors, fundamental units, forces, moments, and conditions of equilibrium. The course equates to college Newtonian physics and basic engineering mechanics in statics.

Math 452, 352. Math Applications II. This course allows students to apply previous mathematics to dynamics problems in physics and mechanics. Topics include force, velocity, acceleration, impulse, momentum, work, power, potential energy, and kinetic energy. The course equates to college Newtonian physics and basic engineering mechanics in dynamics.

Math 321, 221. Algebra I. The course covers basic properties of the real number system, exponents, polynomials, factoring, solving linear equations and inequalities, fractional expressions, radical notation, absolute value, and dimension symbols. The course equates to one and one-half semester hours of college algebra.

Math 322, 222. Algebra II. This course covers complex numbers, solving quadratic equations, formulas and applied problems, radical equations, equations reducible to quadratic, variation, correspondences, relations and ordered pairs, graphs of equations, functions, graphs and applications of functions, symmetry, even/odd functions; increasing/decreasing functions, periodic functions, the algebra of functions, and transformations. The course equates to one and one-half semester hours of college algebra.

Math 323, 223. Algebra III. Topics covered in this course are lines and linear functions, parallel and perpendicular lines, the distance formula, quadratic functions, mathematical models, sets, sentences and inequalities, equations and inequalities with absolute value, quadratic and rational inequalities, polynomial functions, division of polynomials, the remainder and factor theorems, theorems about roots of polynomials, rational roots and further help in finding roots. The course equates to one and one-half semester hours of college algebra.

Math 428. Algebra II-III. This advanced-track course covers the material of both Algebra II and Algebra III up though polynomial functions at an accelerated pace. (See course descriptions for Algebra II and Algebra III.) The course equates to two and one-quarter semesters hours of college algebra.

functions, derivatives and integrals of exponential functions, area of a region between two curves, volume, the disc and shell method, work, arc length, integration by parts, trigonometric integrals, inverse trigonometric functions, trigonometric substitution, partial fractions, integration by tables, indeterminate forms and L'Hopital's Rule, and improper integrals. The course equates to three hours of college calculus.
Appendix B - Course Descriptions

SCIENCE DEPARTMENT

Sci 321. Turbo Pascal 1. This is an introductory course in Pascal. It applies the concepts of creative problem solving through the use of principals of computer programming. Topics included are algorithms, language syntax, selection, looping, procedures and program refinement. Emphasis is on clear, concise problem solving, supporting documentation, and well-structured programs.

Sci 322. Turbo Pascal 2. A follow-on course to Sci 321. Topics to be covered include units, functions, data types, arrays, multidimensional arrays, records, files, and sets.

Sci 331. Physics I. This course ephasizes the continuation of problem-solving techniques/strategies as they apply to physics. Specific topics to be covered include simple motion; velocity and acceleration; vectors; bodies in free fall; forces; Newton's laws of motion; work, power, and energy; thermal energy; fluids; and the properties and behavior of waves.

Sci 332. Physics II. This course is a follow-on course to Sci 331, and continues to stress critical thinking and problem solving. Specific topics to be covered include electrostatics; current electricity; electric circuits; magnetism; electromagnetism; electromagnetic induction; rays and radio-activity; the atom and its nucleus; and nuclear energy.

Sci 341. Chemistry 1. This course emphasizes the continued use of problem-solving techniques/strategies and programming as they apply to chemistry. Specific topics to be covered include matter and energy, elements and atoms, ions, chemical nomenclature, chemical reactions, classifying chemical reactions, chemical composition, and stoichiometry.

Sci 342. Chemistry 2. This course is a follow-on course to Sci 341. Topics to be covered include atomic theory, chemical bonding, gases, liquids and solids, solutions, equilibrium, acids and bases, oxidation-reduction.